INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

VIA ELECTRONIC MAIL

March 21, 2014

Mr. Robert Lange
Environmental Control Manager
U.S. Steel Corporation
One North Broadway
Gary, IN 46402

Dear Mr. Lange:

Re: NPDES Permit No. IN0000281
Draft Permit Modification
Gary Works Facility
Gary, Indiana, Lake County

Your request for a permit modification has been reviewed and processed in accordance with rules adopted under 327 IAC 5. Enclosed is a copy of the draft permit modification. Pursuant to IC 13-15-5-1, IDEM will publish a general notice in the newspaper with the largest general circulation within the above county. A 30-day comment period is available in order to solicit input from interested parties, including the general public.

Please review this draft permit modification and associated documents carefully to become familiar with the proposed terms and conditions. Comments concerning the draft permit modification should be submitted in accordance with the procedure outlined in the enclosed public notice form. We suggest that you meet with us to discuss major concerns or objections you may have with the draft permit modification. Questions concerning this draft permit modification may be addressed to Nikki Gardner of my staff, at 317/232-8707 or ngardner@idem.in.gov.

Sincerely,

Stan Rigney, Chief
Industrial NPDES Permits Section
Office of Water Quality

Enclosures

cc: Lake County Health Department
Chief, Permits Section, U.S. EPA, Region 5
Lauren Legler, USS Gary Works

STATE OF INDIANA

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

AMENDED AUTHORIZATION TO DISCHARGE UNDER THE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1251 et seq., the "Act"), and IDEM's permitting authority under IC 13-15,

U.S. STEEL – GARY WORKS
UNITED STATES STEEL CORPORATION

is authorized to discharge only via outfall locations designated in this permit, from an Integrated Steel Mill facility which manufactures iron and steel products, and coke and coke making byproducts that is located at One North Broadway, Gary, Indiana 46402, to receiving waters named the Grand Calumet River and Lake Michigan in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, III, and IV hereof.

The permit, as issued on January 22, 2010, and subsequently modified on March 16, 2012 and February 8 2013, is hereby amended, to apply streamlined mercury variances, as contained herein. The amended provisions shall become effective _____. All terms and conditions of the permit not modified at this time remain in effect. Further, any existing condition or term affected by the amendments will remain in effect until the amended provisions become effective. This permit may be revoked for the nonpayment of applicable fees in accordance with IC 13-18-20.

This permit and the authorization to discharge, as amended, shall expire at midnight February 28, 2015. In order to receive authorization to discharge beyond the date of expiration, the permittee shall submit such information and forms as are required by the Indiana Department of Environmental Management no later than 180 days prior to the date of expiration.

Signed on _____ for the Indiana Department of Environmental Management.

_____
Paul Higginbotham, Chief
Permits Branch
Office of Water Quality

TREATMENT FACILITY CLASSIFICATION

The discharger has seven industrial wastewater treatment plants rated as Class D, classified in accordance with 327 IAC 5-22, Classification of Wastewater Treatment Plants.

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting until the permittee redirects the flow from Outfall 010 to Outfall 005, the permittee is authorized to discharge from Outfall 005. The discharge is limited to non-contact cooling water used in the coal preparation, coke and coke byproducts manufacturing processes, non-contact cooling water used in the coke oven gas desulfurization facility, non-contact cooling water used in the coke plant boiler houses, treated process wastewater from the coke and coke byproducts manufacturing processes (internal Outfall 501), steam condensate, and storm water runoff. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into the Grand Calumet River.

   This Table is no longer applicable and has been removed. The redirection of Outfall 010 through Outfall 005 was completed June 5, 2011. The combined discharge is regulated in Part I.A.2.

2. During the period beginning when the flow from Outfall 010 has been redirected to Outfall 005, the permittee is authorized to discharge the combined flow through Outfall 005. The discharge is limited to non-contact cooling water used in the coal preparation, coke and coke byproducts manufacturing processes, non-contact cooling water used in the coke oven gas desulfurization facility, non-contact cooling water used in the coke plant boiler houses, treated process wastewater from the coke and coke byproducts manufacturing processes (internal Outfall 501), steam condensate, and storm water runoff. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into the Grand Calumet River. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [6][11][14]
Outfall 005

Table 1

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency	Type
Flow	Report	Report	MGD	-	-	-	Daily	Continuous
Oil & Grease [1]	------	------	------	Report	Report	mg/l	2 X Weekly	3 Grabs/24 Hrs.
Selenium [5]	2.1	4.2	lbs/day	4.1	8.2	ug/l	1 X Weekly	24-Hr. Comp.
Benzene	Report	Report	lbs/day	Report	Report	ug/l	3 X Monthly	3 Grabs/24-Hrs
Benzo-a-pyrene								
Interim	Report	Report	lbs/day	Report	1.0	ug/l	2 X Weekly	24-Hr. Comp.
Final [13]	0.047	0.12	lbs/day	0.093	0.23	ug/l	2 X Weekly	24-Hr. Comp.
Ammonia (as N)	Report	Report	lbs/day	Report	Report	ug/l	2 X Weekly	24-Hr. Comp.
Free Cyanide [2][17]								
Season 1 [16]	3.5	8.2	lbs/day	6.9	16.1	ug/l	2 X Weekly	See Part I.Q.
Season 2 [16]	3.1	6.6	lbs/day	6.0	13	ug/l	2 X Weekly	See Part I.Q.
Mercury [5][7][20]								
WQBEL's	0.00066	0.0016	lbs/day	1.3	3.2	ng/l	Bi-Monthly [15]	Grab
Interim Discharge Limit [12]	------	-------	--------	2.4 [21]	Report	ng/l	Bi-Monthly [15]	Grab
Total Residual Chlorine [8][3]	4.1	9.2 [10]	lbs/day	8	18	ug/l	Daily [9]	Grab
Fluoride	Report	Report	lbs/day	Report	Report	ug/l	2 X Monthly	24-Hr. Comp.
Chloride	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Sulfate	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Whole Effluent Toxicity [18]								
Interim				Report		TU_c	Quarterly [19]	24-Hr. Comp.
Final	-------	-------	-------	1.0	-------	TU_c	Quarterly [19]	24-Hr. Comp.
Temperature [4]	-------	-------	-------	------	Report	°F	2 X Weekly	6 Grabs/24-Hrs.

Table 2

	Quality or Concentration			Monitoring Requirements	
	Daily	Daily		Measurement	Sample
Parameter	Minimum	Maximum	Units	Frequency	Type
pH	6.0	9.0	s.u.	3 X Weekly	Grab

[1] Additional monitoring and reporting requirements are contained in Part I.O., Visible Oil Corrective Action Monitoring Program.

[2] Cyanide shall be measured and reported as Available (Free) Cyanide. See Part I.Q. for additional requirements.

[3] See Part I.G. of the permit for Pollutant Minimization Requirements.

[4] See Part III.A., for additional Temperature Requirements.

[5] The permittee shall monitor and report the identified metals as total recoverable metals.

[6] See Part I.B. of the permit for the Narrative Water Quality Standards.

[7] The permittee applied for, and received, a variance from the water quality criterion used to establish the referenced mercury WQBELs under the streamlined mercury variance (SMV) procedures of 327 IAC 5-3.5. Compliance with the interim discharge limit will demonstrate compliance with this permit. See Part IV of the permit for additional requirements related to the SMV.

[8] See Part I.P. for Zebra and Quagga Mussel Control and Chlorination for additional requirements.

[9] Monitoring for TRC shall be 1 X Daily during Zebra or Quagga mussel intake chlorination, and continue for three additional days after zebra or quagga mussel treatment has been completed.

[10] Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 30.7 lbs/day for Outfall 005.

[11] See the Fact Sheet for the water treatment additives in use at Outfall 005 that have been reviewed and are approved for use at this facility by the Commissioner. In the event that changes are to be made in the use of water treatment additives including dosage rates contributing to Outfall 005, the permittee shall notify the Indiana Department of Environmental Management as required in Part II.C.1 of this permit. The use of any new or changed water treatment additives or dosage rates shall not cause the discharge from any permitted outfall to exhibit chronic or acute toxicity. Acute and chronic aquatic toxicity information must be provided with any notification regarding any new or changed water treatment additives or dosage rates.

[12] For the term of the NPDES permit, the permittee is subject to the interim discharge limit developed under the provisions of 327 IAC 5-3.5-8. Each reporting period (i.e., bi-monthly), the permittee shall report both a daily maximum value and an annual average value for mercury. The annual average value shall be calculated as the average of all daily values from the most recent twelve-month period. Reporting of the annual average value for mercury is not required during the first year of the permit term. Compliance with the interim

discharge limit will be achieved when the average of daily values measured over the most recent (rolling) twelve-month period is less than the interim discharge limit.

[13] The permittee has up to a thirty-four (34) month schedule of compliance from the effective date of the permit as outlined in Part I.D. of the permit in which to meet the final effluent limitations for Benzo(a)pyrene and the limits for Whole Effluent Toxicity (WET). Interim limitations shall apply until the final limits take effect.

[14] To ensure that process waters from current coke plant operations are not discharged, US Steel shall certify to that effect with each monthly discharge monitoring report as follows:

> "I certify that, to the best of my knowledge and belief, and having consulted with the manager of coke plant operations and coke plant personnel responsible for managing and disposing of cokemaking and by-product recovery wastewater, that process wastewaters generated from cokemaking and by-product recovery operations have not been discharged to the Grand Calumet River or to Lake Michigan through any outfall or conveyance since the last discharge monitoring report, except for the treated coke plant by-product recovery wastewater in Internal Outfall 501."

[15] Bi-Monthly monitoring shall be conducted in the months of February, April, June, August, October, and December of each year.

[16] Season 1 ("salmonids absent") limitations apply April 1 – September 30 of each year. Season 2 ("salmonids present") limitations apply October 1 – March 31 of each year. These seasons are based on times when salmonids occur at the site.

[17] US Steel may develop the appropriate studies to determine an alternate season.

[18] See Part I.L. of the permit for Biomonitoring Requirements.

[19] Samples shall be taken once at any time during each of the four annual quarters:

(A) January-February-March;
(B) April-May-June;
(C) July-August-September; and
(D) October-November-December.

For quarterly monitoring, in the first quarter for example, the permittee may conduct sampling within the month of January, February or March. The result from this reporting timeframe shall be reported on the March DMR, regardless of which of the months within the quarter the sample was taken.

[20] The following EPA test methods and/or Standard Methods and associated LODs and LOQs are to be used in the analysis of the effluent samples. Alternative methods may be used if first approved by IDEM.

Parameter	EPA Method	LOD	LOQ
Mercury	1631, Revision E	0.2 ng/l	0.5 ng/l

[21] Annual average for the purpose of the mercury interim discharge limit.

3. During the period beginning on the effective date of this permit and lasting until the expiration date, the permittee is authorized to discharge cokemaking and by-product recovery area treatment system water including groundwater from the East Side Solid Waste Management Area (SWMA), from Internal Outfall 501 through Outfall 005, to the Grand Calumet River. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to commingling with any other process or non-process waters. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS
Internal Outfall 501

	Quantity or Loading			Quality or Concentration			Monitoring	Requirements
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency	Type
Flow	Report	Report	MGD	-	-	-	Daily	Continuous
TSS	706	1,359	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Oil & Grease	Report	50.4	lbs/day	Report	Report	mg/l	2 X Weekly	3 Grabs/24 Hrs.
Selenium [1]	Report	Report	lbs/day	Report	Report	ug/l	2 X Weekly	24-Hr. Comp.
Benzene	Report	0.25	lbs/day	Report	Report	ug/l	3 X Monthly	3 Grabs/24-Hrs
Benzo-a-pyrene	0.08	0.15	lbs/day	Report	Report	ug/l	2 X Weekly	24-Hr. Comp.
Naphthalene	0.09	0.15	lbs/day	Report	Report	ug/l	2 X Weekly	24-Hr. Comp.
Phenols (4AAP)	0.25	0.50	lbs/day	Report	Report	ug/l	2 X Weekly	24-Hr. Comp.
Ammonia (as N)	27.9	40.4	lbs/day	Report	Report	ug/l	2 X Weekly	24-Hr. Comp.
Cyanide [2]								
Total	27.7	41.0	lbs/day	Report	Report	ug/l	2 X Weekly	See Part I.Q.
Free	Report	Report	lbs/day	Report	Report	ug/l	2 X Weekly	See Part I.Q.

Table 2

	Quality or Concentration			Monitoring	Requirements
	Daily	Daily		Measurement	Sample
Parameter	Minimum	Maximum	Units	Frequency	Type
pH	Report	Report	s.u.	1 X Weekly	Grab

[1] The permittee shall monitor and report the identified metals as total recoverable metals.

[2] Cyanide shall be measured and reported as Total and Available (Free) Cyanide. See Part I.Q. for additional requirements.

4. During the period beginning on the effective date of this permit and lasting until the flow currently discharging from Outfall 010 has been re-directed through Outfall 005, the permittee is authorized to discharge non-contact cooling water used in coal preparation, coke and coke byproducts manufacturing processes, and storm water runoff via Outfall 010 to the Grand Calumet River. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into the Grand Calumet River.

   This Table is no longer applicable and has been removed. The redirection of Outfall 010 through Outfall 005 was completed June 5, 2011. The combined discharge is regulated in Part I.A.2.

5. During the period beginning on the effective date of this permit, the permittee is authorized to discharge non-contact cooling water from blast furnace and sinter plant, steam condensate, treated SWD-1 Landfill wastewater, North Tennessee Street Drainage Sump effluent, and storm water runoff though Outfall 015 to the Grand Calumet River. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into the Grand Calumet River. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1][11][13]
Outfall 015

Table 1

	Quantity or Loading			Quality or Concentration			Monitoring	Requirements
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency	Type
Flow	Report	Report	MGD	-	-	-	Daily	Continuous
Total Suspended Solids	Report	Report	lbs/day	Report	Report	mg/l	1 X Weekly	24-Hr. Comp.
Oil & Grease [2]	------	------	------	Report	Report	mg/l	1 X Weekly	Grab
Ammonia (as N)	Report	Report	lbs/day	Report	Report	mg/l	1 X Weekly	24-Hr. Comp.
$CBOD_5$	Report	Report	lbs/day	Report	Report	mg/l	1 X Weekly	24-Hr. Comp.
Free Cyanide [3]	Report	Report	lbs/day	Report	Report	ug/l	1 X Weekly	See Part I.Q.
Phenols (4AAP)	Report	Report	lbs/day	Report	Report	ug/l	1 X Weekly	24-Hr. Comp.
Lead [4]	Report	Report	lbs/day	Report	Report	ug/l	1 X Weekly	24-Hr. Comp.
Zinc [4]	Report	Report	lbs/day	Report	Report	ug/l	1 X Weekly	24-Hr. Comp.
Temperature [5]	--------	--------	--------	--------	Report	°F	1 X Weekly	6 Grabs/24-Hrs.
Total Residual Chlorine [12]	0.11	0.26 [6]	lbs/day	8	18	ug/l	Daily [7]	Grab
Mercury [4][8][14]								
WQBEL's	0.000018	0.000045	lbs/day	1.3	3.2	ng/l	Bi-Monthly [10]	Grab
Interim Discharge Limit [9]	------	-------	--------	3.7 [15]	Report	ng/l	Bi-Monthly [10]	Grab

Table 2

	Quality or Concentration			Monitoring	Requirements
	Daily	Daily		Measurement	Sample
Parameter	Minimum	Maximum	Units	Frequency	Type
pH	6.0	9.0	s.u.	1 X Weekly	Grab

[1] The discharge of non-contact cooling waters from blast furnace and sintering operations is permitted only through Outfalls 015, 018, 019, and 035.

[2] Additional monitoring and reporting requirements are contained in Part I.O., Visible Oil Corrective Action Monitoring Program.

[3] Cyanide shall be measured and reported as Available (Free) Cyanide. See Part I.Q. for additional requirements.

[4] The permittee shall measure and report identified metals as total recoverable metals.

[5] See Part III.A., for additional Temperature Requirements.

[6] Compliance with the daily maximum mass value will be demonstrated if the calculated value is less than 0.85 lbs/day.

[7] Monitoring for TRC shall be 1 X Daily during zebra or quagga mussel intake chlorination, and continue for three additional days after zebra or quagga mussel treatment has been completed. See Part I.P. for Zebra and Quagga Mussel Control and Chlorination for additional requirements.

[8] The permittee applied for, and received, a variance from the water quality criterion used to establish the referenced mercury WQBELs under the streamlined mercury variance (SMV) procedures of 327 IAC 5-3.5. Compliance with the interim discharge limit will demonstrate compliance with this permit. See Part IV of the permit for additional requirements related to the SMV.

[9] For the term of the NPDES permit, the permittee is subject to the interim discharge limit developed under the provisions of 327 IAC 5-3.5-8. Each reporting period (i.e., bi-monthly), the permittee shall report both a daily maximum value and an annual average value for mercury. The annual average value shall be calculated as the average of all daily values from the most recent twelve-month period. Reporting of the annual average value for mercury is not required during the first year of the permit term. Compliance with the interim discharge limit will be achieved when the average of daily values measured over the most recent (rolling) twelve-month period is less than the interim discharge limit.

[10] Bi-monthly monitoring shall be conducted in the months of February, April, June, August, October, and December of each year.

[11] See the Fact Sheet for the water treatment additives in use at Outfall 015 that have been reviewed and are approved for use at this facility by the Commissioner. In the event that changes are to be made in the use of water treatment additives including dosage rates contributing to Outfall 015, the permittee shall notify the Indiana Department of Environmental Management as required in Part II.C.1 of this permit. The use of any new or changed water treatment additives or dosage rates shall not cause the discharge from any permitted outfall to exhibit chronic or acute toxicity. Acute and chronic aquatic toxicity information must be provided with any notification regarding any new or changed water treatment additives or dosage rates.

[12] See Part I.G. of the permit for Pollutant Minimization Requirements.

[13] See Part I.B. of the permit for the Narrative Water Quality Standards.

[14] The following EPA test methods and/or Standard Methods and associated LODs and LOQs are to be used in the analysis of the effluent samples. Alternative methods may be used if first approved by IDEM.

Parameter	EPA Method	LOD	LOQ
Mercury	1631, Revision E	0.2 ng/l	0.5 ng/l

[15] Annual average for the purpose of the mercury interim discharge limit.

6. During the period beginning on the effective date of this permit, the permittee is authorized to discharge treated SWD-1 Landfill wastewaters through Outfall 607 to the Grand Calumet River via Outfall 015. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to commingling with any other process or non-process waters. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [4]
Outfall 607

	Quantity or Loading			Quality or Concentration			Monitoring	Requirements
Parameter	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report	MGD	-	-	-	Daily	Continuous
Total Suspended Solids	Report	Report	lbs/day	30.0	60.0	mg/l	1 X Weekly	24-Hr. Comp.
Oil & Grease	------	------	------	10.0	15.0	mg/l	1 X Weekly	Grab
Ammonia (as N)	Report	Report	lbs/day	Report	Report	mg/l	1 X Weekly	24-Hr. Comp.
$CBOD_5$	Report	Report	lbs/day	Report	Report	mg/l	1 X Weekly	24-Hr. Comp.
Free Cyanide [1]	Report	Report	lbs/day	Report	Report	mg/l	1 X Monthly	See Part I.Q.
Phenols (4AAP)	Report	Report	lbs/day	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Lead [2]	Report	Report	lbs/day	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Zinc [2]	Report	Report	lbs/day	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Benzo(a)pyrene	Report	Report	lbs/day	Report	Report	mg/l	1 X Quarter[3]	24-Hr. Comp.
pH	------	------	------	------	Report	s.u.	1 X Weekly	Grab

[1] Cyanide shall be measured and reported as Available (Free) Cyanide. See Part I.Q. for additional requirements.

[2] The permittee shall measure and report identified metals as <u>total recoverable metals</u>.

[3] Samples shall be taken once during each of the four annual quarters:

(A) January-February-March;
(B) April-May-June;
(C) July-August-September; and
(D) October-November-December.

For quarterly monitoring, in the first quarter for example, the permittee may conduct sampling within the month of January, February <u>or</u> March. The result from this reporting timeframe shall be reported on the March DMR, regardless of which of the months within the quarter the sample was taken.

[4] By January 31st of each year, US Steel will provide all Mercury data collected for this outfall for the previous year.

7. During the period beginning on the effective date of this permit, the permittee is authorized to discharge blast furnace and sinter plant non-contact cooling water, storm water runoff and turbo-boiler blowdown, stock house misc. steam condensate & air conditioner non-contact water through Outfall 018 to the Grand Calumet River. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into the Grand Calumet River. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1][10][13]
Outfall 018

Table 1

	Quantity or Loading			Quality or Concentration			Monitoring	Requirements
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency	Type
Flow	Report	Report	MGD	-	-	-	Daily	Continuous
Oil & Grease [2][14]	------	------	------	Report	Report	mg/l	1 X Weekly	Grab
Ammonia (as N)	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Free Cyanide [4]	------	Report	lbs/day	------	Report	mg/l	1 X Monthly	See Part I.Q.
Phenols (4AAP)	Report	Report	lbs/day	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Copper [5]	Report	Report	lbs/day	Report	Report	mg/l	1 X Weekly	24-Hr. Comp.
Mercury [5][15][7][17]								
WQBEL's	0.00063	0.0016	lbs/day	1.3	3.2	ng/l	Bi-Monthly[12]	Grab
Interim Discharge Limit[6]	------	-------	--------	2.9[16]	Report	ng/l	Bi-Monthly[12]	Grab
Temperature [3]	------	-------	--------	-------	Report	°F	2 X Weekly	6 Grabs/24-Hrs.
Total Residual Chlorine [11]	3.9	8.7 [8]	lbs/day	8	18	ug/l	Daily [9]	Grab

Table 2

	Quality or Concentration			Monitoring	Requirements
	Daily	Daily		Measurement	Sample
Parameter	Minimum	Maximum	Units	Frequency	Type
pH	6.0	9.0	s.u.	1 X Weekly	Grab

[1] The permittee may discharge noncontact cooling water from blast furnace and sintering operations only through Outfalls 015, 018, 019, and 035.

[2] Additional monitoring and reporting requirements are contained in Part I.O., Visible Oil Corrective Action Monitoring Program.

[3] See Part III.A. of the permit for the Temperature Requirements.

[4] Cyanide shall be measured and reported as Available (Free) Cyanide. See Part I.Q. for additional requirements.

[5] The permittee shall measure and report identified metals as total recoverable metals.

[6] For the term of the NPDES permit, the permittee is subject to the interim discharge limit developed under the provisions of 327 IAC 5-3.5-8. Each

reporting period (i.e., bi-monthly), the permittee shall report both a daily maximum value and an annual average value for mercury. The annual average value shall be calculated as the average of all daily values from the most recent twelve-month period. Reporting of the annual average value for mercury is not required during the first year of the permit term. Compliance with the interim discharge limit will be achieved when the average of daily values measured over the most recent (rolling) twelve-month period is less than the interim discharge limit.

[7] The permittee applied for, and received, a variance from the water quality criterion used to establish the referenced mercury WQBELs under the streamlined mercury variance (SMV) procedures of 327 IAC 5-3.5. Compliance with the interim discharge limit will demonstrate compliance with this permit.

[8] Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 29.1 lbs/day.

[9] Monitoring for TRC shall be 1 X Daily during zebra or quagga mussel intake chlorination, and continue for three additional days after zebra or quagga mussel treatment has been completed. See Part I.P. for Zebra and Quagga Mussel Control and Chlorination for additional requirements.

[10] See the Fact Sheet for the water treatment additives in use at Outfall 018 that have been reviewed and are approved for use at this facility by the Commissioner. In the event that changes are to be made in the use of water treatment additives including dosage rates contributing to Outfall 018, the permittee shall notify the Indiana Department of Environmental Management as required in Part II.C.1 of this permit. The use of any new or changed water treatment additives or dosage rates shall not cause the discharge from any permitted outfall to exhibit chronic or acute toxicity. Acute and chronic aquatic toxicity information must be provided with any notification regarding any new or changed water treatment additives or dosage rates.

[11] See Part I.G. of the permit for Pollutant Minimization Requirements.

[12] Bi-monthly monitoring shall be conducted in the months of February, April, June, August, October, and December of each year.

[13] See Part I.B. of the permit for the Narrative Water Quality Standards.

[14] If oil and grease is measured in the effluent in significant quantities, the source of such discharge is to be investigated and eliminated. The facility is required to investigate and eliminate any significant or measured concentration of oil and grease (quantities in excess of 5 mg/l). The intent of this requirement is to assure that oil and grease is not added to once-through cooling water in measurable quantities (5 mg/l).

[15] The following EPA test methods and/or Standard Methods and associated LODs and LOQs are to be used in the analysis of the effluent samples. Alternative methods may be used if first approved by IDEM.

Parameter	EPA Method	LOD	LOQ
Mercury	1631, Revision E	0.2 ng/l	0.5 ng/l

[16] Annual average for the purpose of the mercury interim discharge limit.

[17] See Part IV of the permit for additional requirements related to the SMV.

8. During the period beginning on the effective date of this permit, the permittee is authorized to discharge blast furnace and sinter plant non-contact cooling water, storm water runoff, power station and No. 2 Q-BOP non-contact cooling water, CWT plant brine regenerant, turboboiler blowdown and steam condensate through Outfall 019 to the Grand Calumet River. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into the Grand Calumet River. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1][9][11]
Outfall 019

Table 1

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency	Type
Flow	Report	Report	MGD	-	-	-	Daily	Continuous
Oil & Grease [12][14]	-------	-------	------	Report	Report	mg/l	1 X Weekly	Grab
Temperature [2]	--------	-------	------	-------	Report	°F	2 X Weekly	6 Grabs/24-Hrs.
Free Cyanide [3]	-------	Report	lbs/day	------	Report	mg/l	1 X Monthly	See Part I.Q.
Mercury [4][6][15][17]								
WQBEL's	0.00053	0.0013	lbs/day	1.3	3.2	ng/l	Bi-Monthly [10]	Grab
Interim Discharge Limit[5]	-------	-------	------	3.2[16]	Report	ng/l	Bi-Monthly [10]	Grab
Ammonia (as N)	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Phenols (4AAP)	Report	Report	lbs/day	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Total Residual Chlorine [13]	3.3	7.4 [7]	lbs/day	8	18	ug/l	Daily [8]	Grab

Table 2

	Quality or Concentration			Monitoring	Requirements
	Daily	Daily		Measurement	Sample
Parameter	Minimum	Maximum	Units	Frequency	Type
pH	6.0	9.0	s.u.	1 X Weekly	Grab

[1] The permittee may discharge non-contact cooling waters from blast furnace and sintering operations only through Outfalls 015, 018, 019, and 035.

[2] See Part III.A. of the permit for the Temperature Requirements.

[3] Cyanide shall be measured and reported as Available (Free) Cyanide. See Part I.Q. for additional requirements.

[4] The permittee shall measure and report identified metals as total recoverable metals.

[5] For the term of the NPDES permit, the permittee is subject to the interim discharge limit developed under the provisions of 327 IAC 5-3.5-8. Each reporting period (i.e., bi-monthly), the permittee shall report both a daily maximum value and an annual average value for mercury. The annual average value shall be calculated as the average of all daily values from the most recent twelve-month period. Reporting of the annual average value for mercury is not

annual average value for mercury is not required during the first year of the permit term. Compliance with the interim discharge limit will be achieved when the average of daily values measured over the most recent (rolling) twelve-month period is less than the interim discharge limit.

[6] The permittee applied for, and received, a variance from the water quality criterion used to establish the referenced mercury WQBELs under the streamlined mercury variance (SMV) procedures of 327 IAC 5-3.5. Compliance with the interim discharge limit will demonstrate compliance with this permit.

[7] Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 24.7 lbs/day.

[8] Monitoring for TRC shall be 1 X Daily during zebra or quagga mussel intake chlorination, and continue for three additional days after zebra or quagga mussel treatment has been completed. See Part I.P. for Zebra and Quagga Mussel Control and Chlorination for additional requirements.

[9] See the Fact Sheet for the water treatment additives in use at Outfall 019 that have been reviewed and are approved for use at this facility by the Commissioner. In the event that changes are to be made in the use of water treatment additives including dosage rates contributing to Outfall 019, the permittee shall notify the Indiana Department of Environmental Management as required in Part II.C.1 of this permit. The use of any new or changed water treatment additives or dosage rates shall not cause the discharge from any permitted outfall to exhibit chronic or acute toxicity. Acute and chronic aquatic toxicity information must be provided with any notification regarding any new or changed water treatment additives or dosage rates.

[10] Bi-monthly monitoring shall be conducted in the months of February, April, June, August, October, and December of each year.

[11] See Part I.B. of the permit for the Narrative Water Quality Standards.

[12] Additional monitoring and reporting requirements are contained in Part I.O., Visible Oil Corrective Action Monitoring Program.

[13] See Part I.G. of the permit for Pollutant Minimization Requirements.

[14] If oil and grease is measured in the effluent in significant quantities, the source of such discharge is to be investigated and eliminated. The facility is required to investigate and eliminate any significant or measured concentration of oil and grease (quantities in excess of 5 mg/l). The intent of this requirement is to assure that oil and grease is not added to once-through cooling water in measurable quantities (5 mg/l).

[15] The following EPA test methods and/or Standard Methods and associated LODs and LOQs are to be used in the analysis of the effluent samples. Alternative methods may be used if first approved by IDEM.

Parameter	EPA Method	LOD	LOQ
Mercury	1631, Revision E	0.2 ng/l	0.5 ng/l

[16] Annual average for the purpose of the mercury interim discharge limit.

[17] See Part IV of the permit for additional requirements related to the SMV.

9. During the period beginning on the effective date of this permit, the permittee is authorized to discharge No. 1 BOP Shop non-contact cooling water, No.1 continuous caster non-contact cooling water, steam condensate, and storm water through Outfall 020 to the Grand Calumet River. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into the Grand Calumet River. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1][9][11]
Outfall 020

Table 1

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency	Type
Flow	Report	Report	MGD	-	-	-	Daily	Continuous
Oil & Grease [2][13]	------	------	------	Report	Report	mg/l	1 X Weekly	Grab
Temperature [3]	-------	-------	-------	-------	Report	°F	2 X Weekly	6 Grabs/24-Hrs.
Lead [4]	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Zinc [4]	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Mercury [4][6][14][16]								
WQBEL's	0.00087	0.0022	lbs/day	1.3	3.2	ng/l	Bi-Monthly [10]	Grab
Interim Discharge Limit[5]	-------	-------	-------	7.8[15]	Report	ng/l	Bi-Monthly [10]	Grab
Ammonia (as N)	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Total Residual Chlorine [12]	5.4	12 [7]	lbs/day	8	18	ug/l	Daily [8]	Grab

Table 2

	Quality or Concentration			Monitoring Requirements	
	Daily	Daily		Measurement	Sample
Parameter	Minimum	Maximum	Units	Frequency	Type
pH	6.0	9.0	s.u.	1 X Weekly	Grab

[1] There shall be no discharge of any steelmaking area process wastewater (steelmaking, vacuum degassing and continuous casting) or other process wastewaters from Outfall 020.

[2] Additional monitoring and reporting requirements are contained in Part I.O., Visible Oil Corrective Action Monitoring Program.

[3] See Part III.A. of the permit for the Temperature Requirements.

[4] The permittee shall measure and report identified metals as <u>total recoverable metals</u>.

[5] For the term of the NPDES permit, the permittee is subject to the interim discharge limit developed under the provisions of 327 IAC 5-3.5-8. Each reporting period (i.e., bi-monthly), the permittee shall report both a daily maximum value and an annual average value for mercury. The annual average value shall be calculated as the average of all daily values from the most recent twelve-month period. Reporting of the annual average value for mercury is not

required during the first year of the permit term. Compliance with the interim discharge limit will be achieved when the average of daily values measured over the most recent (rolling) twelve-month period is less than the interim discharge limit.

[6] The permittee applied for, and received, a variance from the water quality criterion used to establish the referenced mercury WQBELs under the streamlined mercury variance (SMV) procedures of 327 IAC 5-3.5. Compliance with the interim discharge limit will demonstrate compliance with this permit.

[7] Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 40.3 lbs/day.

[8] Monitoring for TRC shall be 1 X Daily during zebra or quagga mussel intake chlorination, and continue for three additional days after zebra or quagga mussel treatment has been completed. See Part I.P. for Zebra and Quagga Mussel Control and Chlorination for additional requirements.

[9] See the Fact Sheet for the water treatment additives in use at Outfall 020 that have been reviewed and are approved for use at this facility by the Commissioner. In the event that changes are to be made in the use of water treatment additives including dosage rates contributing to Outfall 020, the permittee shall notify the Indiana Department of Environmental Management as required in Part II.C.1 of this permit. The use of any new or changed water treatment additives or dosage rates shall not cause the discharge from any permitted outfall to exhibit chronic or acute toxicity. Acute and chronic aquatic toxicity information must be provided with any notification regarding any new or changed water treatment additives or dosage rates.

[10] Bimonthly monitoring shall be conducted in the months of February, April, June, August, October, and December of each year.

[11] See Part I.B. of the permit for the Narrative Water Quality Standards.

[12] See Part I.G. of the permit for Pollutant Minimization Requirements.

[13] If oil and grease is measured in the effluent in significant quantities, the source of such discharge is to be investigated and eliminated. The facility is required to investigate and eliminate any significant or measured concentration of oil and grease (quantities in excess of 5 mg/l). The intent of this requirement is to assure that oil and grease is not added to once-through cooling water in measurable quantities (5 mg/l).

[14] The following EPA test methods and/or Standard Methods and associated LODs and LOQs are to be used in the analysis of the effluent samples. Alternative methods may be used if first approved by IDEM.

Parameter	EPA Method	LOD	LOQ
Mercury	1631, Revision E	0.2 ng/l	0.5 ng/l

[15] Annual average for the purpose of the mercury interim discharge limit.

[16] See Part IV of the permit for additional requirements related to the SMV.

10. During the period beginning on the effective date of this permit, the permittee is authorized to discharge air compressor cooling water, air conditioning condensates, steam condensate, and storm water runoff through Outfall 021 to the Grand Calumet River. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into the Grand Calumet River. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1][4][5]
Outfall 021

Table 1

	Quantity or Loading			Quality or Concentration			Monitoring	Requirements
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency	Type
Flow	Report	Report	MGD	-	-	-	1 X Monthly	Estimate
Oil & Grease	------	------	------	-------	Report	mg/l	1 X Monthly	Grab
Total Residual Chlorine [6]	0.040	0.090 [2]	lbs/day	8	18	ug/l	Daily [3]	Grab
Ammonia (as N)	Report	Report	lba/day	Report	Report	ug/l	2 X Monthly	Grab

Table 2

	Quality or Concentration			Monitoring	Requirements
	Daily	Daily		Measurement	Sample
Parameter	Minimum	Maximum	Units	Frequency	Type
pH	6.0	9.0	s.u.	1 X Monthly	Grab

[1] There shall be no discharge of process wastewaters through this outfall.

[2] Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 0.3 lbs/day.

[3] Monitoring for TRC shall be 1 X Daily during zebra or quagga mussel intake chlorination, and continue for three additional days after zebra or quagga mussel treatment has been completed. See Part I.P. for Zebra and Quagga Mussel Control and Chlorination for additional requirements.

[4] See the Fact Sheet for the water treatment additives in use at Outfall 021 that have been reviewed and are approved for use at this facility by the Commissioner. In the event that changes are to be made in the use of water treatment additives including dosage rates contributing to Outfall 021, the permittee shall notify the Indiana Department of Environmental Management as required in Part II.C.1 of this permit. The use of any new or changed water treatment additives or dosage rates shall not cause the discharge from any permitted outfall to exhibit chronic or acute toxicity. Acute and chronic aquatic toxicity information must be provided with any notification regarding any new or changed water treatment additives or dosage rates.

[5] See Part I.B. of the permit for the Narrative Water Quality Standards.

[6] See Part I.G. of the permit for Pollutant Minimization Requirements.

11. During the period beginning on the effective date of this permit, the permittee is authorized to discharge air conditioning and steam condensates and storm water runoff through Outfall 023 to the Grand Calumet River. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into the Grand Calumet River. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1][2][3]
Outfall 023

Table 1

Parameter	Quantity or Loading Monthly Average	Quantity or Loading Daily Maximum	Units	Quality or Concentration Monthly Average	Quality or Concentration Daily Maximum	Units	Monitoring Measurement Frequency	Requirements Sample Type
Flow	Report	Report	MGD	-	-	-	1 X Monthly	Estimate
Oil & Grease	------	------	------	-------	Report	mg/l	1 X Monthly	Grab
Ammonia (as N)	Report	Report	lbs/day	Report	Report	ug/l	2 X Monthly	Grab

Table 2

Parameter	Quality or Concentration Daily Minimum	Quality or Concentration Daily Maximum	Units	Monitoring Measurement Frequency	Requirements Sample Type
pH	6.0	9.0	s.u.	1 X Monthly	Grab

[1] There shall be no discharge of process wastewaters through this outfall.

[2] See the Fact Sheet for the water treatment additives in use at Outfall 023 that have been reviewed and are approved for use at this facility by the Commissioner. In the event that changes are to be made in the use of water treatment additives including dosage rates contributing to Outfall 023, the permittee shall notify the Indiana Department of Environmental Management as required in Part II.C.1 of this permit. The use of any new or changed water treatment additives or dosage rates shall not cause the discharge from any permitted outfall to exhibit chronic or acute toxicity. Acute and chronic aquatic toxicity information must be provided with any notification regarding any new or changed water treatment additives or dosage rates.

[3] See Part I.B. of the permit for the Narrative Water Quality Standards.

14. During the period beginning on the effective date of this permit, the permittee is authorized to discharge air conditioning and steam condensates, and storm water runoff through Outfall 026 to the Grand Calumet River. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into the Grand Calumet River. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1][2][3]
Outfall 026 (Inactive)

Table 1

	Quantity or Loading			Quality or Concentration			Monitoring	Requirements
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency	Type
Flow	Report	Report	MGD	-	-	-	1 X Monthly	Estimate
Oil & Grease	------	------	------	-------	Report	mg/l	1 X Monthly	Grab

Table 2

	Quality or Concentration			Monitoring	Requirements
	Daily	Daily		Measurement	Sample
Parameter	Minimum	Maximum	Units	Frequency	Type
pH	6.0	9.0	s.u.	1 X Monthly	Grab

[1] US Steel shall notify the Compliance Evaluation Section of the Office of Water Quality (OWQ) at least 30 days prior to re-activation of this outfall.

[2] See Part I.B. of the permit for the Narrative Water Quality Standards.

[3] There shall be no discharge of process wastewaters through this outfall.

15. During the period beginning on the effective date of this permit, the permittee is authorized to discharge treated wastewater from steelmaking, vacuum degassing, continuous casting and hot forming process wastewaters (Internal Outfall 603), storm water runoff, non-contact cooling water and direct contact slab cooling water through Outfalls 028 and 030 to the Grand Calumet River. The permittee is authorized to discharge from Outfalls 028 & 030 (combined total) and reported as Outfall 600 to the Grand Calumet River. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into the Grand Calumet River. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1][9][11]
028/030 (Outfall 600)

Table 1

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency	Type
Flow	Report	Report	MGD	-	-	-	Daily	Continuous
Total Suspended Solids	2,038	5,933	lbs/day	Report	Report	mg/l	5 X Weekly	24-Hr. Comp.
Oil & Grease [4]	1,274	2,807	lbs/day	Report	Report	mg/l	5 X Weekly	3 Grabs/ 24 Hrs
Lead [3]	6.1	12	lbs/day	0.026	0.052	mg/l	2 X Weekly	24-Hr. Comp.
Zinc [3]	Report	Report	lbs/day	Report	Report	mg/l	1 X Weekly	24-Hr. Comp.
Mercury [3][5][13]								
Final	0.00031	0.00075	lbs/day	1.3	3.2	ng/l	Bi-Monthly [8]	Grab
Interim Discharge Limit [10]	------	-------	--------	[14]	Report	ng/l	Bi-Monthly [8]	Grab
Ammonia (as N)	Report	Report	lbs/day	Report	Report	mg/l	1 X Weekly	24-Hr. Comp.
Fluoride	Report	Report	lbs/day	Report	Report	mg/l	1 X Weekly	24-Hr. Comp.
Total Residual Chlorine [12]	1.9	4.2 [6]	lbs/day	8	18	ug/l	Daily [7]	Grab
Temperature [2]	----------	----------	----------	----------	Report	°F	2 X Weekly	6 Grabs/24-Hrs.
Whole Effluent Toxicity			See Part I.L., Biomonitoring Requirements				Quarterly	24-Hr. Comp.

Table 2

	Quality or Concentration			Monitoring	Requirements
	Daily	Daily		Measurement	Sample
Parameter	Minimum	Maximum	Units	Frequency	Type
pH	6.0	9.0	s.u.	1 X Weekly	Grab

[1] The permittee shall measure on the same day and at the same time and report Outfalls 028 and 030 separately and also report as a combined total (Outfall 600).

[2] See Part III.A. of the permit for the Temperature Requirements.

[3] The permittee shall measure and report identified metals as <u>total recoverable metals</u>.

[4] Additional monitoring and reporting requirements are contained in Part I.O., Visible Oil Corrective Action Monitoring Program.

[5] The permittee applied for, and received, a variance from the water quality criterion used to establish the referenced mercury WQBELs under the streamlined mercury variance (SMV) procedures of 327 IAC 5-3.5. Compliance with the interim discharge limit will demonstrate compliance with this permit. See Part IV of the permit for additional requirements related to the SMV.

[6] Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 14.1 lbs/day.

[7] Monitoring for TRC shall be 1 X Daily during zebra or quagga mussel intake chlorination, and continue for three additional days after zebra or quagga mussel treatment has completed. See Part I.P. for Zebra and Quagga Mussel Control and Chlorination for additional requirements.

[8] Bi-monthly monitoring shall be conducted in the months of February, April, June, August, October, and December of each year.

[9] See the Fact Sheet for the water treatment additives in use at Outfall 028/030 that have been reviewed and are approved for use at this facility by the Commissioner. In the event that changes are to be made in the use of water treatment additives including dosage rates contributing to Outfall 028/030, the permittee shall notify the Indiana Department of Environmental Management as required in Part II.C.1 of this permit. The use of any new or changed water treatment additives or dosage rates shall not cause the discharge from any permitted outfall to exhibit chronic or acute toxicity. Acute and chronic aquatic toxicity information must be provided with any notification regarding any new or changed water treatment additives or dosage rates.

[10] For the term of the NPDES permit, the permittee is subject to the interim discharge limit developed under the provisions of 327 IAC 5-3.5-8. Each reporting period (i.e., bi-monthly), the permittee shall report both a daily maximum value and an annual average value for mercury. The annual average value shall be calculated as the average of all daily values from the most recent twelve-month period. Reporting of the annual average value for mercury is not required during the first year of the permit term. Compliance with the interim discharge limit will be achieved when the average of daily values measured over the most recent (rolling) twelve-month period is less than the interim discharge limit.

[11] See Part I.B. of the permit for the Narrative Water Quality Standards.

[12] See Part I.G. of the permit for Pollutant Minimization Requirements.

[13] The following EPA test methods and/or Standard Methods and associated LODs and LOQs are to be used in the analysis of the effluent samples. Alternative methods may be used if first approved by IDEM.

Parameter	EPA Method	LOD	LOQ
Mercury	1631, Revision E	0.2 ng/l	0.5 ng/l

[14] Outfall 028: 2.8 ng/l Annual average for the purpose of the mercury interim discharge limit.

Outfall 030: 3.0 ng/l Annual average for the purpose of the mercury interim discharge limit.

16. During the period beginning on the effective date of this permit, the permittee is authorized to discharge BOP (1-BOP and Q-BOP) treatment, vacuum degasser and continuous casting (1-Caster, 2-Caster A/B line, and 2-Caster C Line) treatment wastewater through Outfall 603 to the Grand Calumet River via Outfall 028/030. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to commingling with any other process or non-process waters. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1]
Internal Outfall 603

	Quantity or Loading				Quality or Concentration			Monitoring Requirements	
Parameter	Monthly Average	Daily Maximum		Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report		MGD	-	-	-	Daily	Continuous
Lead [2]	Report	Report	lbs/day	Report	Report	Report	mg/l	2 X Weekly[3]	24-Hr. Comp.
Zinc [2]	11.88	36.38	lbs/day	Report	Report	Report	mg/l	2 X Weekly[3]	24-Hr. Comp.

[1] Samples taken in compliance with the monitoring requirements above shall be taken at a point representative of the discharge but prior to entry into Outfalls 028/030. Separate samples and flow measurements shall be taken at the discharge of the No.1 Continuous Caster Scale Pit, the filtered blowdown from the No. 2 Continuous Caster, and the discharge of the No.1 and No.1A BOP Thickeners. The mass loadings from each monitoring point shall be calculated and added together to determine the daily and monthly average mass discharges.

[2] The permittee shall measure and report identified metals as total recoverable metals.

[3] Sampling at 603 for lead and zinc shall occur on the same day and at approximately at the same time as the sample taken at Outfalls 028 and 030.

17. During the period beginning on the effective date of this permit, the permittee is authorized to discharge miscellaneous non-contact cooling water, steam condensate, freeze protection water, and storm water through Outfall 032 to the Grand Calumet River. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into the Grand Calumet River. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [3][4]
Outfall 032

Table 1

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency	Type
Flow	Report	Report	MGD	-	-	-	1 X Monthly	Estimate
Oil & Grease	------	------	------	-------	Report	mg/l	1 X Monthly	Grab
Total Residual Chlorine [5]	0.020	0.045 [1]	lbs/day	8	18	ug/l	Daily [2]	Grab
Ammonia (as N)	Report	Report	lbs/day	Report	Report	mg/l	1 X Weekly	24-Hr. Comp.

Table 2

	Quality or Concentration			Monitoring Requirements	
	Daily	Daily		Measurement	Sample
Parameter	Minimum	Maximum	Units	Frequency	Type
pH	6.0	9.0	s.u.	1 X Monthly	Grab

[1] Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 0.15 lbs/day.

[2] Monitoring for TRC shall be 1 X Daily during zebra or quagga mussel intake chlorination, and continue for three additional days after zebra or quagga mussel treatment has completed. See Part I.P. for Zebra and Quagga Mussel Control and Chlorination for additional requirements.

[3] See the Fact Sheet for the water treatment additives in use at Outfall 032 that have been reviewed and are approved for use at this facility by the Commissioner. In the event that changes are to be made in the use of water treatment additives including dosage rates contributing to Outfall 032, the permittee shall notify the Indiana Department of Environmental Management as required in Part II.C.1 of this permit. The use of any new or changed water treatment additives or dosage rates shall not cause the discharge from any permitted outfall to exhibit chronic or acute toxicity. Acute and chronic aquatic toxicity information must be provided with any notification regarding any new or changed water treatment additives or dosage rates.

[4] See Part I.B. of the permit for the Narrative Water Quality Standards.

[5] See Part I.G. of the permit for Pollutant Minimization Requirements.

18. During the period beginning on the effective date of this permit, the permittee is authorized to discharge non-contact cooling water from sheet and tin mills and the atmospheric gas plant, non-process wastewater from Railroad Kirk Yard, steam condensate, and storm water through Outfall 033 to the Grand Calumet River. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into the Grand Calumet River. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1][5][6]
Outfall 033

Table 1

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency	Type
Flow	Report	Report	MGD	-	-	-	1 X Monthly	Estimate
Oil & Grease [2]	------	------	------	------	Report	mg/l	1 X Monthly	Grab
Phenols (4AAP)	-----	Report	lbs/day	------	Report	mg/l	1 X Monthly	24-Hr. Comp.
Ammonia (as N)	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Total Residual Chlorine [7]	0.013	0.030 [3]	lbs/day	8	18	ug/l	Daily [4]	Grab

Table 2

	Quality or Concentration			Monitoring Requirements	
	Daily	Daily		Measurement	Sample
Parameter	Minimum	Maximum	Units	Frequency	Type
pH	6.0	9.0	s.u.	1 X Monthly	Grab

[1] There shall be no discharge of process wastewaters through Outfall 033.

[2] Additional monitoring and reporting requirements are contained in Part I.O., Visible Oil Corrective Action Monitoring Program.

[3] Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 0.1 lbs/day.

[4] Monitoring for TRC shall be 1 X Daily during zebra or quagga mussel intake chlorination, and continue for three additional days after zebra or quagga mussel treatment has completed. See Part I.P. for Zebra and Quagga Mussel Control and Chlorination for additional requirements.

[5] See the Fact Sheet for the water treatment additives in use at Outfall 033 that have been reviewed and are approved for use at this facility by the Commissioner. In the event that changes are to be made in the use of water treatment additives including dosage rates contributing to Outfall 033, the permittee shall notify the Indiana Department of Environmental Management as required in Part II.C.1 of this permit. The use of any new or changed water treatment additives or dosage rates shall not cause the discharge from any permitted outfall to exhibit chronic or

acute toxicity. Acute and chronic aquatic toxicity information must be provided with any notification regarding any new or changed water treatment additives or dosage rates.

[6] See Part I.B. of the permit for the Narrative Water Quality Standards.

[7] See Part I.G. of the permit for Pollutant Minimization Requirements.

19. During the period beginning on the effective date of this permit, the permittee is authorized to discharge treated wastewater from Internal Outfalls, 604, 605, and 606, non-contact cooling water from the finishing operations, non-contact cooling water from the ferrous chloride recycling discharge, steam condensate, and storm water runoff through Outfall 034 to the Grand Calumet River. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into the Grand Calumet River. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1][2][6][10][13]
Outfall 034

Table 1

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency	Type
Flow	Report	Report	MGD	-	-	-	Daily	Continuous
$CBOD_5$ [4]								
Summer	1,334	2,669	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Winter	4,537	9,074	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Oil & Grease [5]	1,430	3,660	lbs/day	Report	Report	mg/l	5 X Weekly	3 Grabs/ 24 Hrs.
Total Suspended Solids	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Ammonia (as N)	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Lead [8]	2.52	5.85	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Zinc [8]	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Copper [8]	3.8	8.7	lbs/day	0.018	0.041	mg/l	2 X Weekly	24-Hr. Comp.
Cadmium [8]	2.3	3.4	lbs/day	0.011	0.016	mg/l	1 X Monthly	24-Hr. Comp.
Nickel [8]	Report	Report	lbs/day	Report	Report	mg/l	1 X Quarterly[15]	24-Hr. Comp.
Silver [8]	0.042	0.072	lbs/day	0.20	0.34	ug/l	2 X Monthly	24-Hr. Comp.
Total Chromium [8]	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Mercury [8][11][17]								
Final	0.00028	0.00068	lbs/day	1.3	3.2	ng/l	Bi-Monthly [14]	Grab
Interim Discharge Limit [12]	------	-------	--------	2.5 [18]	Report	ng/l	Bi-Monthly [14]	Grab
Phenols (4AAP)	26.00	39.00	lbs/day	Report	Report	mg/l	1 X Weekly	24-Hr. Comp.
Total Residual Chlorine	1.7	3.8 [9]	lbs/day	8	18	ug/l	See Footnote [7]	Grab
Temperature [3]	----------	----------	----------	----------	Report	°F	2 X Weekly	6 Grabs/24-Hrs.
Whole Effluent Toxicity [16]	------	------	------	3.6	------	TU_c	Quarterly [15]	24-Hr. Comp.

Table 2

	Quality or Concentration			Monitoring Requirements	
	Daily	Daily		Measurement	Sample
Parameter	Minimum	Maximum	Units	Frequency	Type
pH	6.0	9.0	s.u.	1X Daily	Grab
Dissolved Oxygen	5.0		mg/l	1 X Weekly	Grab

[1] The permittee shall only discharge the effluents from Internal Outfalls 604, 605, and 606 through Outfall 034.

[2] The permittee shall monitor Outfalls 034, 604, 605, and 606 on the same days.

[3] See Part III.A. of the permit for the Temperature Requirements.

[4] Summer limitations apply from July 1 through September 30. Winter limitations apply from October 1 through June 30.

[5] Additional monitoring and reporting requirements are contained in Part I.O., Visible Oil Corrective Action Monitoring Program.

[6] The following wastewater treatment systems may be added to reduce the $CBOD_5$ on a continuous year-round basis:

(i) Internal Outfall 604- Chlorination (sodium hypochlorite) treatment.

(ii) Internal Outfall 605- Chlorination (sodium hypochlorite) treatment.

(iii) Outfall 034 – Sodium Bisulfite addition (de-chlorination).

[7] Continuous chlorination at the above outfalls is permitted on a year-round basis. The wastewater shall be de-chlorinated prior to discharge from Outfall 034. Monitoring for TRC shall be daily during zebra or quagga mussel intake chlorination, and 2 X Weekly during continuous chlorination treatment when the intake is not being treated for zebra mussels. See Part I.P. for Zebra and Quagga Mussel Control and Chlorination for additional requirements.

[8] The permittee shall measure and report identified metals as <u>total recoverable metals</u>.

[9] Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 12.7 lbs/day.

[10] See Part I.B. of the permit for the Narrative Water Quality Standards.

[11] The permittee applied for, and received, a variance from the water quality criterion used to establish the referenced mercury WQBELs under the streamlined mercury variance (SMV) procedures of 327 IAC 5-3.5. Compliance with the interim discharge limit will demonstrate compliance with this permit. See Part IV of the permit for additional requirements related to the SMV.

[12] For the term of the NPDES permit, the permittee is subject to the interim discharge limit developed under the provisions of 327 IAC 5-3.5-8. Each reporting period (i.e., bi-monthly), the permittee shall report both a daily maximum value and an annual average value for mercury. The annual average value shall be calculated as the average of all daily values from the most recent twelve-month period. Reporting of the annual average value for mercury is not required during the first year of the permit term. Compliance with the interim discharge limit will be achieved when the average of daily values measured over the most recent (rolling) twelve-month period is less than the interim discharge limit.

[13] See the Fact Sheet for the water treatment additives in use at Outfall 034 that have been reviewed and are approved for use at this facility by the Commissioner. In the event that changes are to be made in the use of water treatment additives including dosage rates contributing to Outfall 034, the permittee shall notify the Indiana Department of Environmental Management as required in Part II.C.1 of this permit. The use of any new or changed water treatment additives or dosage rates shall not cause the discharge from any permitted outfall to exhibit chronic or acute toxicity. Acute and chronic aquatic toxicity information must be provided with any notification regarding any new or changed water treatment additives or dosage rates.

[14] Bi-monthly monitoring shall be conducted in the months of February, April, June, August, October, and December of each year.

[15] Samples shall be taken once at any time during each of the four annual quarters:

(A) January-February-March;
(B) April-May-June;
(C) July-August-September; and
(D) October-November-December.

For quarterly monitoring, in the first quarter for example, the permittee may conduct sampling within the month of January, February or March. The result from this reporting timeframe shall be reported on the March DMR, regardless of which of the months within the quarter the sample was taken.

[16] See Part I.L. of the permit for Biomonitoring Requirements.

[17] The following EPA test methods and/or Standard Methods and associated LODs and LOQs are to be used in the analysis of the effluent samples. Alternative methods may be used if first approved by IDEM.

Parameter	EPA Method	LOD	LOQ
Mercury	1631, Revision E	0.2 ng/l	0.5 ng/l

[18] Annual average for the purpose of the mercury interim discharge limit.

20. During the period beginning on the effective date of this permit, the permittee is authorized to discharge treated process wastewaters from cold rolling, acid pickling, alkaline cleaning, hot coating, electroplating, and hot strip mill oil cellars through Internal Outfall 604 to the Grand Calumet River via Outfall 034. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to commingling with any other process or non-process waters. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1][2]
Outfall 604

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
Parameter	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report	MGD	-	-	-	Daily	Continuous
Total Suspended Solids	2,901	6,455	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Oil & Grease	Report	Report	lbs/day	Report	Report	mg/l	5 X Weekly	3 Grabs/ 24 Hrs.
Total Recoverable Chromium[4]	28.25	45.77	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Zinc [4]	33.42	70.00	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Lead [4]	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Total Cyanide [3]	10.74	19.83	lbs/day	Report	Report	mg/l	1 X Quarterly [7]	See Part I.Q.
Cadmium [4]	Report	Report	lbs/day	Report	Report	mg/l	1 X Quarterly [7]	24-Hr. Comp.
Hexavalent Chromium [6][8]	0.15	0.46	lbs/day	Report	Report	mg/l	1 X Weekly	Grab
Copper [4]	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Nickel [4]	39.32	65.76	lbs/day	Report	Report	mg/l	1 X Quarterly [7]	24-Hr. Comp.
Silver [4]	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
TTO [5]	------	35.19	lbs/day	-------	--------	-----	1 X Monthly	24-Hr. Comp.
Naphthalene	------	1.68	lbs/day	-------	Report	mg/l	2 X Weekly	24-Hr. Comp.
Tetrachloroethylene	-----	2.51	lbs/day	-------	Report	mg/l	2 X Weekly	2 Grabs/ 24 Hrs.

[1] Bypasses of process wastewaters from the above sources around the Terminal Treatment Plant are permitted only in accordance with Section B.2., Part II of this permit. The permittee shall not use cyanide plating solutions in any metal finishing operations, unless expressly authorized by a modification of this permit.

[2] Samples taken in accordance with the monitoring requirements above shall be taken at a point representative of the discharge but prior to entry into Outfall 034.

[3] Cyanide shall be measured and reported as Total Cyanide. See Part I.Q. for additional requirements.

[4] The permittee shall measure and report the identified metals a total recoverable metals.

[5] The limitation for TTO (Total Toxic Organics) applies to the summation of all quantifiable values greater than 0.01 mg/l for all toxic organics listed under 40 CFR 433.11(e) which are reasonably expected to be present. This is a federal effluent guideline based limitation and is not an authorization to discharge toxic organic compounds at levels which cause or may cause water quality violations.

The discharge of organic compounds at level which cause or may cause water quality violations is prohibited. The intent of this limitation is to assure that any solvent or other products in use at the plant, which contain any of the listed toxic organic compounds, are disposed of properly, and not dumped, spilled, discharged or leaked.

Certification Statement

In lieu of monthly monitoring for TTO, the party responsible for signing the monthly discharge monitoring report (DMR) forms may make the following statement, as part of the DMR: "Based on my inquiry of the persons directly responsible for managing compliance with the permit limitations for TTO, I certify that, to the best of my knowledge and belief, no disposal of concentrated toxic organics into the wastewaters has occurred since filing of the last discharge monitoring report. I further certify that this facility is implementing the Toxic Organic Pollutant Management Plan submitted to the Compliance Evaluation Section of the Office of Water Quality, as required by this permit." The Certification Statement may not be used until completion of the Toxic Organic Pollutant Management Plan required by Part I.N. of this permit.

If the above mentioned responsible party is unable to make the above Certification Statement because of discharge or spills of any TTO compounds, the Permittee is required to notify IDEM in accordance with Part II.C.3 of this permit.

[6] Hexavalent Chromium shall be measured and reported as dissolved metal. The Hexavalent Chromium sample type shall be grab method. The maximum holding time for a Hexavalent Chromium sample is 24 hours (40 CFR 136.6 Table IB). Therefore, the grab sample must be analyzed within 24 hours.

[7] Samples shall be taken once at any time during each of the four annual quarters:

(A) January-February-March;
(B) April-May-June;
(C) July-August-September; and
(D) October-November-December.

For quarterly monitoring, in the first quarter for example, the permittee may conduct sampling within the month of January, February or March. The result from this reporting timeframe shall be reported on the March DMR, regardless of which of the months within the quarter the sample was taken.

[8] For purposes of calculating the monthly average mass, loadings to be reported on the DMR forms, concentration values below the limit of quantitation (LOQ) of 0.94 ug/l may be assigned a value of zero for purposes of calculating the monthly average mass limit.

21. During the period beginning on the effective date of this permit, the permittee is authorized to discharge treated process wastewaters from the 84" Hot Strip Mill through Internal Outfall 605 to the Grand Calumet River via Outfall 034. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to commingling with any other process or non-process waters. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1]
Outfall 605

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency	Type
Flow	Report	Report	MGD	-	-	-	Daily	Continuous
Total Suspended Solids	725	2,175	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Oil & Grease	Report	1,450	lbs/day	-----	Report	mg/l	5 X Weekly	3 Grab/ 24-Hrs

[1] The permittee may discharge process wastewater from the 84" Hot Strip Mill only through Outfall 605, and oil cellar discharges through Outfall 604 (Terminal Treatment Plant). Non-contact cooling water from the 84" Hot Strip Mill shall only be discharged through Outfall 039.

22. During the period beginning on the effective date of this permit, the permittee is authorized to discharge non-contact cooling water from steel finishing operations, miscellaneous non-process wastewater, and storm water runoff through Internal Outfall 606 to the Grand Calumet River via Outfall 034. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to commingling with other process or non-process waters. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1][2][3]
Outfall 606

	Quantity or Loading			Quality or Concentration			Monitoring	Requirements
Parameter	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report	MGD	-	-	-	Daily	24-Hr. Total
Oil & Grease	----	----	----	-----	Report	mg/l	1 X Weekly	Grab
Total Chromium	----	----	----	-----	Report	mg/l	1 X Monthly	24-Hr. Comp.
Zinc [4]	----	----	----	----	Report	mg/l	1 X Monthly	24-Hr. Comp.
Lead [4]	----	----	----	----	Report	mg/l	1 X Monthly	24-Hr. Comp.
Phenols (4AAP)	----	----	----	----	Report	mg/l	1 X Monthly	24-Hr. Comp.

[1] The permittee may discharge non-process wastewaters associated with steel finishing operations via the 84" X 91" sewer to the final oil skimming basin at Outfall 034 for treatment prior to discharge through Outfall 034.

[2] The permittee shall monitor Outfall 606 for oil and grease, total chromium, lead, zinc, and phenols (4AAP) on the same days that monitoring for Outfalls 034, 604 and 605 occurs.

[3] Corrective action will be initiated after an investigation of any reported discharges of process wastewaters discharging from Outfall 606.

[4] The permittee shall measure and report the identified metals as total recoverable metals.

23. During the period beginning on the effective date of this permit, the permittee is authorized to discharge north blast furnace non-contact cooling water, No. 5 electric power station non-contact cooling water, Co-Generation Plant non-contact cooling water, steam condensate, and storm water runoff through Outfall 035 to Lake Michigan. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into Lake Michigan. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1][6][7][10][11]
Outfall 035

Table 1

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency	Type
Flow	Report	Report	MGD	-	-	-	Daily	Continuous
Oil & Grease [2] [13]	------	------	------	-------	Report	mg/l	1 X Weekly	Grab
Temperature [3]								
Discharge	------	------	------	------	Report	°F	1 X Hour	Continuous
Intake [4]	-------	------	------	------	Report	°F	1 X Hour	Continuous
Thermal Discharge		See Footnote [5] for Effluent Limitations				BTU/Hr	Daily	Continuous
Total Residual Chlorine [9][12]	10	24 [8]	lbs/day	8	18	ug/l	Daily	Grab

Table 2

	Quality or Concentration			Monitoring Requirements	
	Daily	Daily		Measurement	Sample
Parameter	Minimum	Maximum	Units	Frequency	Type
pH	6.0	9.0	s.u.	1 X Monthly	Grab

[1] The permittee may discharge non-contact cooling waters from blast furnace and sintering operations only through Outfalls 015, 018, 019, and 035.

[2] Additional monitoring and reporting requirements are contained in Part I.O., Visible Oil Corrective Action Monitoring Program.

[3] See Part III.A.2. for additional temperature requirements.

[4] The permittee shall continuously monitor intake temperature at the No. 2 Pump Station.

[5] The effluent limitation is 1.211 billion BTU/hour as a maximum daily average. Monitoring shall include flow and intake and outlet temperatures as measured across the condensers on the continuous basis. The daily average BTU's/hour shall be calculated as follows: the BTU's/hour shall be determined once each hour and those volumes shall be averaged over a 24 our period for each day.

[6] There shall be no discharge of blast furnace or sinter plant process wastewaters or process wastewater residuals through Outfall 035.

[7] The permittee is prohibited from undertaking any deliberate action that would result in a degradation of water quality of the OSRW, unless the action complies with the applicable provisions of 327 IAC 5-2-11.7. In addition, whether or not this permit contains a limitation for a BCC, the permittee shall monitor for any BCC known or believed to be present in the discharge, from any point or nonpoint source over which the permittee has control. If there is an increase in loading of a BCC, above normal variability and attributable to a deliberate action, the permittee shall immediately notify IDEM of the increase. If IDEM determines the increased discharge of the BCC does not qualify under one of the exceptions under 327 IAC 5-2-11.7(b) or (c) and is attributable to a deliberate action of the permittee, the permittee shall eliminate the increase.

[8] Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 78.5 lbs/day.

[9] Monitoring for TRC shall be 1 X Daily during zebra or quagga mussel intake chlorination, and continue for three additional days after zebra or quagga mussel treatment has been completed. See Part I.P. for Zebra and Quagga Mussel Control and Chlorination for additional requirements.

[10] See the Fact Sheet for the water treatment additives in use at Outfall 035 that have been reviewed and are approved for use at this facility by the Commissioner. In the event that changes are to be made in the use of water treatment additives including dosage rates contributing to Outfall 035, the permittee shall notify the Indiana Department of Environmental Management as required in Part II.C.1 of this permit. The use of any new or changed water treatment additives or dosage rates shall not cause the discharge from any permitted outfall to exhibit chronic or acute toxicity. Acute and chronic aquatic toxicity information must be provided with any notification regarding any new or changed water treatment additives or dosage rates.

[11] See Part I.B. of the permit for the Narrative Water Quality Standards.

[12] See Part I.G. of the permit for Pollutant Minimization Requirements.

[13] If oil and grease is measured in the effluent in significant quantities, the source of such discharge is to be investigated and eliminated. The facility is required to investigate and eliminate any significant or measured concentration of oil and grease (quantities in excess of 5 mg/l). The intent of this requirement is to assure that oil and grease is not added to once-through cooling water in measurable quantities (5 mg/l).

24. During the period beginning on the effective date of this permit, the permittee is authorized to discharge non-contact cooling water from the 5-Stand Cold Reduction Mill, North Sheet Mill Annealing, the No. 6 and 8 Galvanized lines, air compressor non-contact cooling water, steam condensate, and storm water runoff through Outfall 037 to Lake Michigan. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into Lake Michigan. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1][7][8][9]
Outfall 037

Table 1

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
Parameter	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow								
Interim	Report	Report	MGD	------	------	----	1 X Weekly	Estimate
Final [6]	Report	Report	MGD	-	-	-	Daily	Continuous
Temperature								
Discharge								
Interim	------	------	------	------	Report	°F	1 X Week	Grab
Final [6]	------	------	------	------	Report	°F	1 X Hour	Continuous
Intake	------	------	------	------	Report	°F	1 X Hour	Continuous
Thermal Discharge [6]					Report	BTU/Hr	Daily	Continuous
Oil & Grease [2] [11]	------	------	------	-----	Report	mg/l	1 X Weekly	Grab
Zinc [3]	-----	Report	lbs/day	-----	Report	mg/l	1 X Monthly	24-Hr. Comp.
Phenols (4AAP)	----	Report	lbs/day	-----	Report	mg/l	1 X Monthly	24-Hr. Comp.
Total Residual Chlorine [10]	0.20	0.45 [4]	lbs/day	8	18	ug/l	Daily [5]	Grab

Table 2

	Quality or Concentration			Monitoring Requirements	
Parameter	Daily Minimum	Daily Maximum	Units	Measurement Frequency	Sample Type
pH	6.0	9.0	s.u.	1 X Monthly	Grab

[1] There shall be no discharge of process wastewater through Outfall 037.

[2] Additional monitoring and reporting requirements are contained in Part I.O., Visible Oil Corrective Action Monitoring Program.

[3] The permittee shall measure and report the identified metals as total recoverable metals.

[4] Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 1.5 lbs/day.

[5] Monitoring for TRC shall be 1 X Daily during zebra or quagga mussel intake chlorination, and continue for three additional days after zebra or quagga mussel treatment has been completed. See Part I.P. for Zebra and Quagga Mussel Control and Chlorination for additional requirements.

[6] See Part III.A.2. and A.3. for additional temperature requirements and compliance schedule for continuous monitoring requirements for temperature and flow.

[7] See the Fact Sheet for the water treatment additives in use at Outfall 037 that have been reviewed and are approved for use at this facility by the Commissioner. In the event that changes are to be made in the use of water treatment additives including dosage rates contributing to Outfall 037, the permittee shall notify the Indiana Department of Environmental Management as required in Part II.C.1 of this permit. The use of any new or changed water treatment additives or dosage rates shall not cause the discharge from any permitted outfall to exhibit chronic or acute toxicity. Acute and chronic aquatic toxicity information must be provided with any notification regarding any new or changed water treatment additives or dosage rates.

[8] The permittee is prohibited from undertaking any deliberate action that would result in a degradation of water quality of the OSRW, unless the action complies with the applicable provisions of 327 IAC 5-2-11.7. In addition, whether or not this permit contains a limitation for a BCC, the permittee shall monitor for any BCC known or believed to be present in the discharge, from any point or nonpoint source over which the permittee has control. If there is an increase in loading of a BCC, above normal variability and attributable to a deliberate action, the permittee shall immediately notify IDEM of the increase. If IDEM determines the increased discharge of the BCC does not qualify under one of the exceptions under 327 IAC 5-2-11.7(b) or (c) and is attributable to a deliberate action of the permittee, the permittee shall eliminate the increase.

[9] See Part I.B. of the permit for the Narrative Water Quality Standards.

[10] See Part I.G. of the permit for Pollutant Minimization Requirements.

[11] If oil and grease is measured in the effluent in significant quantities, the source of such discharge is to be investigated and eliminated. The facility is required to investigate and eliminate any significant or measured concentration of oil and grease (quantities in excess of 5 mg/l). The intent of this requirement is to assure that oil and grease is not added to once-through cooling water in measurable quantities (5 mg/l).

25. During the period beginning on the effective date of this permit, the permittee is authorized to discharge non-contact cooling water from the 84" Hot Strip Mill, non-contact cooling water from the reheat furnaces, emergency overflows from the 84" Hot Strip Mill roughing mill scale pit, steam condensate, non-contact cooling water from a cooling tower and storm water through Outfall 039 to Lake Michigan. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into Lake Michigan. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1][5][6][7]
Outfall 039

Table 1

	Quantity or Loading			Quality or Concentration			Monitoring	Requirements
Parameter	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow								
Interim	Report	Report	MGD	------	------	----	1 X Weekly	Estimate
Final [4]	Report	Report	MGD	------	------	-----	Daily	Continuous
Temperature								
Discharge								
Interim	------	------	------	------	Report	°F	1 X Week	Grab
Final [4]	------	------	------	------	Report	°F	1 X Hour	Continuous
Intake [4]	------	------	------	------	Report	°F	1 X Hour	Continuous
Thermal Discharge [4]					Report	BTU/Hr	Daily	Continuous
Oil & Grease [9]	------	------	------	-----	Report	mg/l	1 X Weekly	Grab
Total Residual Chlorine [8]	3.7	8.3 [2]	lbs/day	8	18	ug/l	Daily [3]	Grab

Table 2

	Quality or Concentration			Monitoring	Requirements
Parameter	Daily Minimum	Daily Maximum	Units	Measurement Frequency	Sample Type
pH	6.0	9.0	s.u.	1 X Monthly	Grab

[1] There shall be no discharge of process wastewater through Outfall 039, except as provided for by Part II.B.1., 2. and 3.

[2] Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 27.5 lbs/day.

[3] Monitoring for TRC shall be 1 X Daily during zebra or quagga mussel intake chlorination, and continue for three additional days after zebra or quagga mussel treatment has completed. See Part I.P. for Zebra and Quagga Mussel Control and Chlorination for additional requirements.

[4] See Part III.A.2. and A.3. for additional temperature requirements and compliance schedule for continuous monitoring requirements for temperature and flow.

[5] See the Fact Sheet for the water treatment additives in use at Outfall 039 that have been reviewed and are approved for use at this facility by the Commissioner. In

the event that changes are to be made in the use of water treatment additives including dosage rates contributing to Outfall 039, the permittee shall notify the Indiana Department of Environmental Management as required in Part II.C.1 of this permit. The use of any new or changed water treatment additives or dosage rates shall not cause the discharge from any permitted outfall to exhibit chronic or acute toxicity. Acute and chronic aquatic toxicity information must be provided with any notification regarding any new or changed water treatment additives or dosage rates.

[6] The permittee is prohibited from undertaking any deliberate action that would result in a degradation of water quality of the OSRW, unless the action complies with the applicable provisions of 327 IAC 5-2-11.7. In addition, whether or not this permit contains a limitation for a BCC, the permittee shall monitor for any BCC known or believed to be present in the discharge, from any point or nonpoint source over which the permittee has control. If there is an increase in loading of a BCC, above normal variability and attributable to a deliberate action, the permittee shall immediately notify IDEM of the increase. If IDEM determines the increased discharge of the BCC does not qualify under one of the exceptions under 327 IAC 5-2-11.7(b) or (c) and is attributable to a deliberate action of the permittee, the permittee shall eliminate the increase.

[7] See Part I.B. of the permit for the Narrative Water Quality Standards.

[8] See Part I.G. of the permit for Pollutant Minimization Requirements.

[9] If oil and grease is measured in the effluent in significant quantities, the source of such discharge is to be investigated and eliminated. The facility is required to investigate and eliminate any significant or measured concentration of oil and grease (quantities in excess of 5 mg/l). The intent of this requirement is to assure that oil and grease is not added to once-through cooling water in measurable quantities (5 mg/l).

27. During the period beginning on the effective date of this permit, the permittee is authorized to discharge non-contact cooling water from the ore yard rectifier system through Outfall(s) 041A and 041B to Lake Michigan. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into the boat slip at Lake Michigan. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1][2]
Outfall 041A & 041B

	Quantity or Loading			Quality or Concentration			Monitoring	Requirements
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency	Type
Flow	Report	Report	MGD	-	-	-	1 X Monthly	Estimate
Oil & Grease	------	------	------	Report	Report	mg/l	1 X Monthly	Grab
Total Residual Chlorine [4][5]	0.0057	0.013 [6]	lbs/day	8	18	ug/l	Daily	Grab
Zinc [3]	Report	Report	lbs/day	Report	Report	mg/l	1 X Monthly	Grab

Table 2

	Quality or Concentration			Monitoring	Requirements
	Daily	Daily		Measurement	Sample
Parameter	Minimum	Maximum	Units	Frequency	Type
pH	6.0	9.0	s.u.	1 X Monthly	Grab

[1] See Part I.B. of the permit for the Narrative Water Quality Standards.

[2] The permittee is prohibited from undertaking any deliberate action that would result in a degradation of water quality of the OSRW, unless the action complies with the applicable provisions of 327 IAC 5-2-11.7. In addition, whether or not this permit contains a limitation for a BCC, the permittee shall monitor for any BCC known or believed to be present in the discharge, from any point or nonpoint source over which the permittee has control. If there is an increase in loading of a BCC, above normal variability and attributable to a deliberate action, the permittee shall immediately notify IDEM of the increase. If IDEM determines the increased discharge of the BCC does not qualify under one of the exceptions under 327 IAC 5-2-11.7(b) or (c) and is attributable to a deliberate action of the permittee, the permittee shall eliminate the increase.

[3] The permittee shall measure and report the identified metals as total recoverable metals.

[4] Monitoring for TRC shall be 1 X Daily during zebra or quagga mussel intake chlorination, and continue for three additional days after zebra or quagga mussel treatment has completed. See Part I.P. for Zebra and Quagga Mussel Control and Chlorination for additional requirements.

[5] See Part I.G. of the permit for Pollutant Minimization Requirements.

[6] Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 0.043 lbs/day.

28. During the period beginning on the effective date of this permit, the permittee is authorized to discharge water intake screen backwash through Outfalls BW-1, BW-2, BW-3, BW-4, and BW-5 to Lake Michigan. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into the boat slip at Lake Michigan. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1][2][4]

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency	Type
Flow	-------	Report	MGD	------	------	-----	Quarterly [3]	Estimate

[1] Discharge of water intake screen backwash is authorized from the following Lake Michigan water intakes:

BW-1 – No. 1 service water pumping station.
BW-2 – No. 2 service water pumping station.
BW-3 – No. 3 service water pumping station.
BW-4 – No. 4 service water pumping station.
BW-5 – Lakeside service water pumping station.

[2] There shall be no discharge of process wastewaters from Outfalls BW-1, BW-2, BW-3, BW-4, and BW-5.

[3] Samples shall be taken once at any time during each of the four annual quarters:

(A) January-February-March;
(B) April-May-June;
(C) July-August-September; and
(D) October-November-December.

For quarterly monitoring, in the first quarter for example, the permittee may conduct sampling within the month of January, February or March. The result from this reporting timeframe shall be reported on the March DMR, regardless of which of the months within the quarter the sample was taken.

[4] See Part I.B. of the permit for the Narrative Water Quality Standards.

B. NARRATIVE WATER QUALITY STANDARDS

At all times the discharge from any and all point sources specified within this permit shall not cause receiving waters:

1. including the mixing zone, to contain substances, materials, floating debris, oil, scum, or other pollutants:

   a. that will settle to form putrescent or otherwise objectionable deposits;

   b. that are in amounts sufficient to be unsightly or deleterious;

   c. that produce color, visible oil sheen, odor, or other conditions in such degree as to create a nuisance;

   d. which are in amounts sufficient to be acutely toxic to , or to otherwise severely injure or kill aquatic life, other animals, plants, or humans;

   e. which are in concentrations or combinations that will cause or contribute to the growth of aquatic plants or algae to such a degree as to create a nuisance, be unsightly, or otherwise impair the designated uses.

2. outside the mixing zone, to contain substances in concentrations which on the basis of available scientific data are believed to be sufficient to injure, be chronically toxic to, or be carcinogenic, mutagenic, or teratogenic to humans, animals, aquatic life, or plants.

C. MONITORING AND REPORTING

1. Representative Sampling

   Samples and measurements taken as required herein shall be representative of the volume and nature of the discharge.

2. Discharge Monitoring Reports

   a. For parameters with monthly average water quality based effluent limitations (WQBELs) below the LOQ, daily effluent values that are less than the limit of quantitation (LOQ) may be assigned a value of zero (0).

b. For all other parameters for which the monthly average WQBEL is equal to or greater than the LOQ, calculations that require averaging of measurements of daily values (both concentration and mass) shall use an arithmetic mean. When a daily discharge value is below the LOQ, a value of zero (0) shall be used for that value in the calculation to determine the monthly average unless otherwise specified or approved by the Commissioner.

c. Effluent concentrations less than the LOD shall be reported on the Discharge Monitoring Report (DMR) forms as < (less than) the value of the LOD. For example, if a substance is not detected at a concentration of 0.1 µg/l, report the value as <0.1 µg/l.

d. Effluent concentrations greater than or equal to the LOD and less than the LOQ that are reported on a DMR shall be reported as the actual value and annotated on the DMR to indicate that the value is not quantifiable.

e. Mass discharge values which are calculated from concentrations reported as less than the value of the limit of detection shall be reported as less than the corresponding mass discharge value.

f. Mass discharge values that are calculated from effluent concentrations greater than the limit of detection shall be reported as the calculated value.

g. See Part III.E of the permit for additional reporting requirements for values below the limit of quantitation (LOQ).

The permittee shall submit federal and state discharge monitoring reports to the Indiana Department of Environmental Management containing results obtained during the previous month which shall be postmarked no later than the 28th day of the month following each completed monitoring period. The first report shall be submitted by the 28th day of the month following the month in which the permit becomes effective.

The Regional Administrator may request the permittee to submit monitoring reports to the Environmental Protection Agency if it is deemed necessary to assure compliance with the permit.

3. Definitions

a. Monthly Average

(1) Mass Basis - The "monthly average" discharge means the total mass discharge during a calendar month divided by the number of days in the month that the production or commercial facility was discharging. Where less than daily samples is required by this permit, the monthly average discharge shall be determined by the summation of the measured daily mass discharges divided by the number of days during the calendar month when the measurements were made.

(2) Concentration Basis - The "monthly average" concentration means the arithmetic average of all daily determinations of concentration made during a calendar month. When grab samples are used, the daily determination of concentration shall be the arithmetic average (weighted by flow value) of all the samples collected during the calendar day.

b. "Daily Discharge"

(1) Mass Basis – The "daily discharge" means the total mass discharge by weight during any calendar day.

(2) Concentration Basis – The "daily discharge" means the average concentration over the calendar day or any twenty-four (24) hour period that reasonably represents the calendar day for the purposes of sampling.

c. "Daily Maximum"

(1) Mass Basis – The "daily maximum" means the maximum daily discharge mass value for any calendar day.

(2) Concentration Basis – The "daily maximum" means the maximum daily discharge value for any calendar day.

(3) Temperature Basis – The "daily maximum" means the highest temperature value measured for any calendar day.

d. A 24-hour composite sample consists of at least 3 individual flow-proportioned samples of wastewater, taken by the grab sample method or by an automatic sampler, which are taken at approximately equally spaced time intervals for the duration of the discharge within a 24-hour period and which are combined prior to analysis. A flow-proportioned composite sample may be obtained by:

(1) recording the discharge flow rate at the time each individual sample is taken,

(2) adding together the discharge flow rates recorded from each individuals sampling time to formulate the "total flow" value,

(3) the discharge flow rate of each individual sampling time is divided by the total flow value to determine its percentage of the total flow value,

(4) then multiply the volume of the total composite sample by each individual sample's percentage to determine the volume of that individual sample which will be included in the total composite sample.

e. Concentration -The weight of any given material present in a unit volume of liquid. Unless otherwise indicated in this permit, concentration values shall be expressed in milligrams per liter (mg/l).

f. The "Regional Administrator" is defined as the Region V Administrator, U.S. EPA, located at 77 West Jackson Boulevard, Chicago, Illinois 60604.

g. The "Commissioner" is defined as the Commissioner of the Indiana Department of Environmental Management, which is located at the following address: 100 North Senate Avenue, Indianapolis, Indiana 46204.

h. "Limit of Detection" or "LOD" means a measurement of the concentration of a substance that can be measured and reported with ninety-nine percent (99%) confidence that the analyte concentration is greater than zero (0) for a particular analytical method and sample matrix. The LOD is equivalent to the method detection level or MDL.

i. "Limit of Quantitation" or "LOQ" means a measurement of the concentration of a contaminant obtained by using a specified laboratory procedure calibrated at a specified concentration above the method detection level. It is considered the lowest concentration at which a particular contaminant can be quantitatively measured using a specified laboratory procedure for

monitoring of the contaminant. This term is also sometimes called limit quantification or quantification level.

j. "Method Detection Level" or "MDL" means the minimum concentration of an analyte (substance) that can be measured and reported with a ninety-nine percent (99%) confidence that the analyte concentration is greater than zero (0) as determined by procedure set forth in 40 CFR 136, Appendix B. The method detection level or MDL is equivalent to the LOD.

4. Test Procedure

The analytical and sampling methods used shall conform to the current version of 40 CFR 136. Multiple editions of Standard Methods for the Examination of Water and Wastewater are currently approved for most methods, however, 40 CFR Part 136 should be checked to ascertain if a particular method is approved for a particular analyte. The approved methods may be included in the texts listed below. However, different but equivalent methods are allowable if they receive the prior written approval of the Commissioner and the U.S. Environmental Protection Agency.

a. Standard Methods for the Examination of Water and Wastewater 18th, 19th, or 20th Editions, 1992, 1995, or 1998, American Public Health Association, Washington, D.C. 20005.

b. A.S.T.M. Standards, Parts 23, Water; Atmosphere Analysis 1972 American Society for Testing and Materials, Philadelphia, PA 19103.

c. Methods for Chemical Analysis of Water and Wastes June 1974, Revised, March 1983, Environmental Protection Agency, Water Quality Office, Analytical Quality Control Laboratory, 1014 Broadway, Cincinnati, OH 45202.

d. The following analytical methods and limits of detection and limits of quantitation shall be used:

Parameter [7]	Method [1]	Concentration (in ug/l)	
		LOD	(LOQ or ML)
Ammonia	SM 4500-NH3-G, EPA 350.1 (undistilled)	10	32
	SM 4500-NH3-G (w/prep SM 4500-NH3-B)	50	160

	(distilled)		
Benzene	EPA 624	0.5	1.6
Benzo(a)pyrene	610 HPLC [4]	0.023	0.073
Benzo(a)pyrene	610-GC/MS [4]	2.0 [5]	5.7
Cadmium	200.8	0.5	1.6
$CBOD_5$	SM 5210B	---	2000
Chloride	SM 4500 Cl E (Colorimetric Automated)	400	1300
	EPA 300.0 (Anions by IC)	20	64
	----	----	----
Copper	200.8	0.31	1.0
Cyanide, Total	SM 4500-CN-E [2] (colorimetric)	2.5	8.0
Cyanide, Free	4500-CN-I [2]	1	3.2
Fluoride	SM 4500-F-C (Ion Selective Mode)	31	100
	300.0	100	320
Hex. Chrome	218.6	0.3	0.94
Lead	200.8	0.31	1.0
Mercury [6]	1631	0.0002	0.0005
Naphthalene	610 (HPLC)	0.2	0.64
Naphthalene	610 MS, EPA625	2.0	6.4
Nickel	3113B	1	3.2
	200.8	0.5	1.6
Oil and Grease	1664	2000	5000
Phenols	420.4	2	6.4
Selenium	200.8	1	3.2
Silver	200.8	0.2	0.64
Sulfate	300.0	200	640
Tetrachloroethylene			
	624	0.4	1.3
Total Residual Chlorine	4500-CL-D,E	20	60
Total Residual Chlorine	4500-CL-G	20	60
Total Suspended Solids	SM 2540 D	0.64	2.0
Zinc	3120B	3.3	10
Zinc	200.8	1.0	3.2

[1] The methods listed are the EPA Methods referenced in 40 CFR 136 or approved Standard Methods (SM).
[2] American Public Health Association. 1992. Standard Methods for the Examination of Water and Wastewater. 18th Edition. Public Health Assoc., 1015 15th Street NW, Washington DC 20005.
[3] Not Used.
[4] Method 610-GC/MS shall be used at Outfall 501.
[5] MDL and resulting LOQ apply to Outfall 501.
[6] Revision E, or the most currently approved revision.
[7] Mass for each corresponding LOD and LOQ shall be determined using the corresponding concentration provided in the above table multiplied by 8.345 multiplied by the corresponding outfalls flow in MGD. For each outfall use the following in Million Gallons per Day (MGD):
Outfall 005 = 60.4; Outfall 005 (with former 010)= 61.2 Outfall 015=1.7; Outfall 018= 58.2; Outfall 019= 49.3; Outfall 020= 80.6; Outfall 021= 0.6; Outfall 023= 0.1; Outfall 028/030= 28.2; Outfall 032= 0.3; Outfall 033 = 0.2; Outfall 034= 25.4; Outfall 035= 156.8; Outfall 037= 3.0; Outfall 039= 55.0; Outfall 041=0.086.

The permittee may determine a case-specific Limit of Detection (LOD) or Limit of Quantitation (LOQ) using the analytical method specified above, or any other test method which is approved by IDEM prior to use. The LOD shall be derived by the procedure specified for method detection limits contained in 40 CFR Part 136, Appendix B, and the LOQ shall be set equal to 3.18 times the LOD. Other methods may be used if first approved by the IDEM.

5. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

a. The exact place, date, and time of sampling;

b. The person(s) who performed the sampling or measurements;

c. The dates the analyses were performed;

d The person(s) who performed the analyses;

e. The analytical techniques or methods used; and

f. The results of all required analyses and measurements.

6. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of this monitoring shall be included in the calculation and reporting of the values required in the monthly Discharge Monitoring Report (DMR). Such increased frequency shall also be indicated. Other monitoring data not specifically required in this permit (such as internal process or internal waste stream data) which is collected by or for the permittee need not be submitted unless requested by the Commissioner.

7. Records Retention

All records and information resulting from the monitoring activities required by this permit, including all records of analyses performed and calibration and maintenance of instrumentation and recording from continuous monitoring instrumentation, shall be retained for a minimum of three (3) years. In cases where the original records are kept at another location, a copy of all such records shall be kept at the permitted facility. The three years shall be extended:

a. automatically during the course of any unresolved litigation regarding the discharge of pollutants by the permittee or regarding promulgated effluent guidelines applicable to the permittee; or

b. as requested by the Regional Administrator or the Indiana Department of Environmental Management.

D. SCHEDULE OF COMPLIANCE – Outfall 005 Benzo(a)pyrene and Whole Effluent Toxicity (WET)

1. The permittee shall achieve compliance with the effluent limitations specified for Benzo(a)pyrene and WET at Outfall 005 as soon as possible but no later than thirty-four (34) months from the effective date of this permit in accordance with the following schedule:

a. The permittee shall submit a written Plan on the ability to achieve compliance with the new final effluent limits to the Compliance Evaluation Section of the Office of Water Quality (OWQ) nine (9) months from the effective date of this permit. IDEM will provide any comments within 30 days of receipt of the Plan and the permittee will implement the Plan immediately after receipt of IDEM's comments. The Plan shall include a description of the method(s) selected for meeting the newly imposed limitations for

Benzo(a)pyrene and WET at Outfall 005, in addition to any other relevant information. Relevant information should include but is not be limited to summaries of any pilot studies completed, determination of final process selection, a summary of the status of engineering design of the selected processes, project status, equipment procurement, delivery, construction, training, startup, etc. The Plan shall also include a specific time line specifying when each of the steps will be taken. The new effluent limits for Benzo(a)pyrene and WET are deferred for the term of this compliance schedule, unless the new effluent limits can be met at an earlier date. The permittee shall notify the Compliance Evaluation Section of OWQ as soon as the newly imposed effluent limit for Benzo(a)pyrene and/or WET can be met. Upon receipt of such notification by OWQ, the final limits listed in the corresponding discharge limitations Table for Benzo(a)pyrene and/or WET at Outfall 005 will become effective, but no later than thirty-four (34) months from the effective date of this permit. Monitoring and reporting of the effluent for this parameter is required during the interim period.

b. The permittee shall submit a progress report to the Compliance Evaluation Section of OWQ no later than eighteen (18) months from the effective date of this permit. This report shall include detailed information on the steps the permittee has taken to achieve compliance with the final effluent limitations and whether the permittee is meeting the time line set out in the initial Plan.

c. The permittee shall submit a subsequent progress report to the Compliance Evaluation Section of OWQ no later than twenty – seven (27) months from the effective date of this permit. This report shall include detailed information on the steps the permittee has taken to achieve compliance with the final effluent limitations and whether the permittee is meeting the time line set out in the initial Plan.

d. Within thirty (30) days of completion of construction, the permittee shall file with the Industrial NPDES Permits Section of OWQ a notice of installation for the additional pollutant control equipment and a design summary of any modifications.

e. The permittee shall comply with the final effluent limitations for Benzo(a)pyrene and WET at Outfall 005 no later than thirty-four (34) months from the effective date of this permit.

2. If the permittee fails to comply with any deadline contained in the foregoing schedule, the permittee shall, within fourteen (14) days following the missed deadline, submit a written notice of noncompliance to the Compliance Evaluation Section of the OWQ stating the cause of noncompliance, any remedial action taken or planned, and the probability of meeting the date fixed for compliance with final effluent limitations.

E. SCHEDULE OF COMPLIANCE - Mercury

Except as provided below in Paragraph 2, U. S. Steel: (a) shall implement the following activities for evaluating, selecting, and installing mercury control technology; (b) shall achieve compliance with all final water quality based effluent limitations for mercury as soon as possible, but in no event later than sixty months after the effective date of this permit; and, (c) shall not be required to comply with the final water quality based effluent limitations for mercury until sixty months after the effective date of this permit.

1. Evaluating, Selecting and Installing Mercury Control Technology

A. Engineering Evaluation

a. As soon as possible, but in no event later than December 31, 2009, U. S. Steel shall complete an engineering review of mercury control technologies. The review shall include at a minimum, an assessment of all available and potential mercury control technologies including, but not limited to: ion exchange; carbon adsorption; chemical precipitation; filtration, including ultrafiltration; and biological treatment. The review shall identify sites where the evaluated technologies are currently implemented and shall provide information on the efficacy of the technologies in removing mercury at those sites.

b. As soon as possible, but in no event later than February 28, 2010, U. S. Steel shall submit to IDEM an Engineering Review Report summarizing findings from the review of mercury control technologies.

B. Selection of Mercury Control Technologies

a. By the end of 13 months from the effective date of the permit, U. S. Steel will submit to IDEM a progress report on mercury source reduction activities and selection of potential mercury control technologies conducted during the first 12 months of the permit.

b. For each outfall that is subject to water quality based effluent limitations for mercury, U. S. Steel shall complete the following as soon as possible,

but in no event later than twenty-four months after the effective date of this permit:

i. Develop a list of mercury control technologies that could be installed to reduce mercury discharges to meet the water quality based effluent limitations for the specific outfall at issue. In developing the list, U. S. Steel shall consider the engineering evaluation described above and a preliminary evaluation of the discharge characteristics of the specific outfall at issue. For each technology, U. S. Steel shall assess the technical feasibility to pilot test and install the technology for the outfall.

ii. Evaluate the following with regard to each mercury control technology listed for each specific outfall at issue:
    1. Technical implications or impact on products;
    2. Mercury reduction;
    3. Cross media impacts;
    4. Multi-pollutant co-control benefits;
    5. Energy efficiency or consumption impact;
    6. Service water contributions; and
    7. Economic considerations.

iii. Perform pilot testing of at least one listed mercury control technology for the specific outfall for which the technology was listed for purposes of obtaining additional information on the feasibility of installing the specific mercury control technology to reduce mercury discharges to meet the water quality based effluent limitations for the specific outfall at issue.

iv. Either select the specific mercury control technologies that shall be installed to reduce mercury discharges to meet the water quality based effluent limitations for the specific outfall at issue or determine that further pilot testing is necessary before a specific technology can be selected.

c. As soon as possible, but in no event later than twenty-six months after the effective date of this permit, U. S. Steel shall submit an Engineering Evaluation Report to IDEM describing (i) the results of the evaluation and pilot testing described above, (ii) the specific mercury control technology or technologies that were selected in accordance with Paragraph 1.B.b.iv to be installed or an explanation as to why further pilot testing is necessary before a specific technology can be selected for a specific outfall, (iii) why each specific technology was selected for each specific outfall, (iv) where the technologies shall be installed at the facility and why installation of the technologies at the locations shall reduce mercury discharges to meet the water quality based effluent

limitations for each specific outfall, (v) a schedule for installation of the technologies on an outfall-by-outfall basis, that is as expeditious as possible, and (vi) for all technologies that were considered during the Engineering Evaluation but not selected, an explanation as to why the specific technology was not selected.

d. To the extent that U. S. Steel is unable to select a specific technology in accordance with Paragraph 1.B.b.iv for installation to reduce mercury discharges to meet the water quality based effluent limitations for any specific outfall, U. S. Steel shall describe in the Engineering Evaluation Report the steps that it shall take (and a schedule for doing so) for each such outfall to (i) perform further pilot testing, (ii) select a specific technology or technologies in sufficient time to enable it to complete construction of the specific technology no later than fifty-eight months from the effective date of this permit, and complete commissioning/training/start-up of the selected technologies no later than sixty months from the effective date of this permit.

e. For each specific outfall for which U. S. Steel was unable to select a specific technology in accordance with Paragraph 1.B.b.iv, U. S. Steel shall select specific mercury control technologies that shall be installed to reduce mercury discharges to meet the water quality based effluent limitations for the specific outfall at issue in accordance with the schedule developed in accordance with Paragraph 1.B.d. Within two months of selecting specific mercury control technologies in accordance with this paragraph, U. S. Steel also shall submit to IDEM a Supplemental Engineering Evaluation Report pertaining to these outfalls describing and/or specifying:

(i) the results of any additional pilot testing that was performed,

(ii) the specific mercury control technology or technologies that were selected to be installed,

(iii) why each specific technology was selected for each specific outfall,

(iv) where the technologies shall be installed at the facility and why installation of the technologies at the locations shall reduce mercury discharges to meet the water quality based effluent limitations for each specific outfall,

(v) the date or dates when construction of the specific technology or technologies will commence;

(vi) the date or dates when construction of the specific technology will be completed, which shall be as soon as possible but no later than fifty-eight months from the effective date of this permit; and

(vii) the date or dates when commissioning/training/start-up of the selected technologies will be completed, which shall be as soon as possible but no later than sixty months from the effective date of this permit.

C. Installation of Mercury Control Technology

For each outfall for which technology was selected in accordance with Paragraph 1.B:

a. Following selection of a specific technology, U. S. Steel shall complete engineering design for each of the specific mercury control technologies that were selected for installation, and shall provide written notice to IDEM that it has done so.

b. By the end of 36 months from the effective date of the permit, U. S. Steel will submit a progress report as outlined in the Engineering Evaluation Report per Paragraph 1.B.c.

c. As soon as possible, but in no event later than forty-six months from the effective date of this permit, U. S. Steel shall commence construction on each of the specific mercury control technologies that were selected for installation in accordance with Paragraph 1.B.b.iv. For technologies that were selected in accordance with Paragraph 1.B.e, U. S. Steel shall commence construction in accordance with the schedule specified in the Supplemental Engineering Report in accordance with Paragraph 1.B.e. U. S. Steel shall provide written notice to IDEM whenever it commences construction in accordance with this paragraph.

d. As soon as possible, but in no event later than fifty-eight months from the effective date of this permit, U. S. Steel shall complete construction of each of the specific mercury control technologies that were selected for installation in accordance with Paragraph 1.B , and shall provide written notice to IDEM that it has done so.

e. As soon as possible, but in no event later than sixty months from the effective date of this permit, U. S. Steel shall complete commissioning, training and start-up of each of the specific mercury control technologies that were selected for installation in

accordance with Paragraph 1.B., and shall provide written notice to IDEM that it has done so.

2. Termination of Compliance Schedule

U. S. Steel is implementing mercury monitoring and mercury source reduction activities which may lead U. S. Steel to determine that it can achieve compliance with the final water quality based effluent limitations for mercury applicable to specific outfalls without constructing mercury control technology for the specific outfall or outfalls at issue in accordance with this compliance schedule. If U. S. Steel makes that determination, U. S. Steel may choose to terminate this compliance schedule as it relates to any specific outfall by providing written notice to IDEM of its decision. On and after the date of the written notice that U. S. Steel provides to IDEM, U. S. Steel shall be required to comply with the final water quality based effluent limitations for mercury applicable to the specified outfall or outfalls, but shall not be required to continue implementing the requirements of this compliance schedule pertinent to the specified outfall or outfalls at issue.

F. SCHEDULE OF COMPLIANCE – Outfall 010 Benzo(a)pyrene

This Schedule of Compliance is no longer applicable and has been removed. The redirection of Outfall 010 through Outfall 005 was completed June 5, 2011. The combined discharge is regulated as Outfall 005 in Part I.A.2. The Schedule of Compliance for Outfall 005 Benzo(a)pyrene is still in effect and is found in Part I.D. of this permit.

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G. POLLUTION MINIMIZATION PROGRAM

This permit contains water quality-based effluent limits for Total Residual Chlorine which are less than the listed limitation of quantitation (LOQ) value. The permittee is required to develop and conduct a pollutant minimization program (PMP) for Total Residual Chlorine. A PMP has already been conducted for Total Residual Chlorine at Outfall 034, therefore, a new PMP at Outfall 034 will not be required for Total Residual Chlorine. One basic PMP for TRC can be submitted for all affected Outfalls. If the PMP submitted previously for Outfall 034 incorporates the PMP requirements that will be in essence the same as for the other US Steel outfalls covered in this permit then all USS will need to do to meet this requirement is to re-submit that PMP along with a letter to that effect and separate PMP's for the remaining outfalls will not be required.

The laboratory US Steel utilizes to measure selenium has been capable of measuring down to a level that is currently below the water quality based effluent limit. As long as the laboratory is capable of demonstrating the case-specific

LOD of 1.0 ug/l using Test Method 270.2, the pollutant minimization program remains suspended for Selenium at Outfall 005. If it is determined that the case-specific LOD is invalid then the original PMP requirements shall be re-implemented for Selenium at Outfall 005.

1. The goal of the pollutant minimization program shall be to maintain the effluent at or below the WQBEL. The pollutant minimization program shall include, but is not limited to, the following:

   a. Submit a control strategy designed to proceed toward the goal within 180 days of the effective date of this permit.

   b. Implementation appropriate cost-effective control measures, consistent with the control strategy within 365 days of the effective date of this permit.

   c. Monitor as necessary to record the progress toward the goal. Potential sources of the pollutant shall be monitored on a semi-annual basis. Quarterly monitoring of the influent of the wastewater treatment system is also required. The permittee may request a reduction in this monitoring requirement after four quarters of monitoring data.

   d. Submit an annual status to the Commissioner at the address listed in Part I.C.3.g. to the attention of the Office of Water Quality, Compliance Evaluation Section, by January 31 of each year that includes the following information:

      (i) All minimization program monitoring results for the previous year.

      (ii) A list of potential sources of the pollutant.

      (iii) A summary of all actions taken to reduce or eliminate the identified sources of the pollutant.

   e. A pollution minimization program may include the submittal of pollution prevention strategies that use changes in production process technology, materials, processes, operations, or procedures to reduce or eliminate the source of the pollutant.

2. No pollution minimization program is required if the permittee demonstrates that the discharge of a pollutant with a WQBEL below the LOQ is reasonably expected to be in compliance with the WQBEL at the

point of discharge into the receiving water. This demonstration may include, but is not limited to, the following:

a. Treatment information, including information derived from modeling the destruction of removal of the pollutant in the treatment process.

b. Mass balance information.

c. Fish tissue studies or other biological studies.

3. In determining appropriate cost-effective control measures to be implemented in a pollution minimization program, the following factors may be considered:

a. Significance of sources.

b. Economic and technical feasibility.

c. Treatability.

H. REOPENING CLAUSES

This permit may be modified, or alternately, revoked and reissued, after public notice and opportunity for hearing:

1. to comply with any applicable effluent limitation or standard issued or approved under 301(b)(2)(C),(D) and (E), 304 (b)(2), and 307(a)(2) of the Clean Water Act, if the effluent limitation or standard so issued or approved:

a. contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or

b. controls any pollutant not limited in the permit.

2. to incorporate any of the reopening clause provisions cited at 327 IAC 5-2-16.

3. to include limitations for specific toxicants if the results of the biomonitoring and/or the TRE study indicate that such limitations are necessary to meet Indiana Water Quality Standards.

4. After reviewing the temperature monitoring data as required in Part III of the permit, the IDEM reserves the right to reopen the permit and, after

public notice and opportunity for hearing, to establish more appropriate temperature requirements.

5. to include a case-specific Limit of Detection (LOD) and/or Limit of Quantitation (LOQ). The permittee must demonstrate that such action is warranted in accordance with the procedures specified under Appendix B, 40 CFR Part 136, using the most sensitive analytical methods approved by EPA under 40 CFR Part 136, or approved by the Commissioner.

6. To revise (such as more or less frequent monitoring) or remove the requirements of the pollutant minimization program (Part I.G.) if supported by information generated as a result of this program.

7. To incorporate effluent limitations reflecting the results of a TMDL or a revised wasteload allocation if the IDEM determines that such effluent limitations are needed to assure that State Water Quality Standards are met in the receiving stream.

8. To include revisions based upon site specific studies. The permittee shall submit work plans to conduct such site-specific studies before initiation of the study. Workplans must be approved by IDEM and the results of all such studies must be approved by IDEM and possibly EPA. Any necessary rulemaking must be completed before the permit may be modified to reflect the results of the studies.

9. To include a monitoring waiver for total cyanide and silver at Outfall 604 if the IDEM determines that such a waiver is appropriate after the review of at least twelve (12) months of monitoring data.

10. To modify the monitoring frequency for $CBOD_5$ after a review of twelve months of data at Outfalls 607 and 015.

I. SANITARY LIFT STATION EMERGENCY OVERFLOWS

1. Discharges from sanitary sewer system lift stations or any other portion of the sanitary sewer system are expressly prohibited. Should any discharge occur, the permittee shall notify the Compliance Evaluation Section within the Office of Water Quality within 24 hours and in writing within five days of the event in accordance with Part II.C.4. The correspondence shall include a description of the duration and cause of the discharge as well as the remedial action taken to eliminate it. The duration and estimated volume of the discharge shall also be reported on the Discharge Monitoring Report. The permittee shall comply with any other relevant provision of its permit in the event of a discharge, including 327 IAC 5-2-8(3).

2. The above stipulations apply to the following sanitary lift stations:

Lift Station	Discharge Point
SOF-6	Outfall 018
SOF-11	Outfall 023
SOF-3	Outfall 032
SOF-51	Outfall 033
SOF-1	Direct to Grand Calumet River
SOF-2	Grand Calumet River via GW-11 Pumping Station
SOF-4	Grand Calumet River via GW-10 Pumping Station
SOF-5	Direct to Lake Michigan
SOF-17	Grand Calumet River via GW-10 Pumping Station

J. STORM WATER MONITORING AND NON-NUMERIC CONDITIONS

1. Beginning on the effective date the permittee shall conduct storm water monitoring for the storm water discharge points set out in Paragraph 2, of this section on a semi-annual basis.

2. Storm Water Monitoring:

(a) Storm Water Monitoring Points:

SW-01	DA #11	East Side of Slip (LM)
SW-02	DA #11	West Side of Slip (LM)
SW-08	DA #32	Virginia Tunnel Drain (GCR)
SW-11		Broadway Tunnel Drain (GCR)
SW-06	DA #29	Railroad Lines (LM)
SW-12 (Railroad Kirk Yard)	DA #22	Outfall 034 Channel (GCR)
Outfall 032	DA #20	Bar Mill and Billet Storage Areas (GCR)
Outfall 033	DA #21	Tin Plate Areas, Atmospheric Gas Plant, Sheet Mill (GCR)

DA – Drainage Area
GCR – Grand Calumet River
LM – Lake Michigan

(b) Monitoring requirements applicable to all points listed above:

Oil & Grease, Carbonaceous Biochemical Oxygen Demand ($CBOD_5$), Chemical Oxygen Demand (COD), Total Suspended Solids (TSS), Total Kjeldahl Nitrogen, Nitrite Plus Nitrate Nitrogen, Total Phosphorus, zinc, and pH.

(c) Additional monitoring requirements for specific outfalls are:

Monitoring Points SW-01, 02, 06, 08, 11, and SW-12 - Ammonia (as N), lead, and copper.

Monitoring Points SW-02 – Iron and Manganese.

(d) For all point source discharges of storm water see Part I.B. of the permit for the Narrative Water Quality Standards.

(e) In the event storm water runoff is not discharged from the same locations monitored for in the storm water application (2F) dated March 1999, the permittee shall monitor storm water runoff from a point or points representative of the discrete storm water drainage areas illustrated in the application.

(f) Areas no longer subject to Storm Water requirements:

DA #1, #3, #4 Coal Handling Yard - Mason Basin #5 does not discharge to waters of the State. SW-10 - Tennessee Drain (Redirected to the Blast Furnace Recycle Closed Loop) does not discharge to waters of the State.

(g) Monitoring Pollutant Reduction Measures:

This permit stipulates a pollutant baseline concentration that shall be used as a means for comparison of future discharge concentrations. Baseline monitoring will be on a semi-annual basis and will provide a basis for the facility to know when additional corrective measures are necessary.

US Steel will use the previous five years of stormwater data from the effective date of the permit to statistically determine the initial baseline concentration for total recoverable zinc, total suspended solids, and COD. New baseline concentrations shall be statistically re-calculated using a five year rolling dataset whenever the semi-annual concentration(s) is less than the existing baseline concentration(s). A new baseline exceeding an existing baseline will default to the existing baseline until the next re-calculation. A sample result exceeding an existing baseline at the time of comparison shall never be included in a baseline recalculation.

Stormwater monitoring data collected during the permit term shall be compared to the baseline concentrations to determine if the control measures being implemented at the site result in an improvement from the baseline established by the permittee. If the sample result exceeds the baseline concentration, the permittee must take corrective actions in Part

J.7.b.. of the permit. Follow-up sampling should occur as soon as possible after implementation of corrective actions.

An exceedance of a baseline concentration is not a permit violation. However, failing to take the corrective actions in Part J.7 as a result of a baseline concentration exceedance is a violation of the permit. The permittee shall strive for continuous improvement from the baseline until it has been demonstrated that the permittee has implemented the best management practice to meet the provisions in Part J.5. of this permit. This permit also requires an annual review of the selection, design, installation, and implementation of your control measures (See Part J.6).

The permittee shall retain any and all records related to this documentation within the SWPPP. In addition, this same information must also be submitted to the Industrial NPDES Permit Section on an annual basis.

(h) Parameters for determining baseline concentrations:

Monitoring Parameters		
Parameter	Outfalls	Monitoring Concentration
Total Recoverable Zinc	All stormwater locations in J.2.	Report mg/l
Total Suspended Solids	All stormwater locations in J.2.	Report mg/l
COD	All stormwater locations in J.2	Report mg/l

2.5 Control Measures and Effluent Limits

In the technology-based limits included in Part J.3-5., the term "minimize" means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practice.

3. Control Measures

Select, design, install, and implement control measures (including best management practices) to address the selection and design considerations in Part J.4 to meet the non-numeric effluent limits in Part J.5. The selection, design, installation, and implementation of these control measures must be in accordance with good engineering practices and manufacturer's specifications. This also includes the BMP requirements for the Coal Processing Area. Any deviation from the manufacturer's specifications shall be documented. If the control measures are not achieving their intended effect in minimizing pollutant

discharges, the control measures must be modified as expeditiously as practicable. Regulated stormwater discharges from the facility include stormwater run-on that commingles with stormwater discharges associated with industrial activity at the facility.

4. Control Measure Selection and Design Considerations

When selecting and designing control measures consider the following:

a. preventing stormwater from coming into contact with polluting materials is generally more effective, and cost-effective, than trying to remove pollutants from stormwater;

b. use of control measures in combination is more effective than use of control measures in isolation for minimizing pollutants in stormwater discharge;

c. assessing the type and quantity of pollutants, including their potential to impact receiving water quality, is critical to designing effective control measures that will achieve the limits in this permit;

d. minimizing impervious areas at your facility and infiltrating runoff onsite (including bioretention cells, green roofs, and pervious pavement, among other approaches), can reduce runoff and improve groundwater recharge and stream base flows in local streams, although care must be taken to avoid ground water contamination;

e. flow can be attenuated by use of open vegetated swales and natural depressions;

f. conservation and/or restoration of riparian buffers will help protect streams from stormwater runoff and improve water quality; and

g. use of treatment interceptors (e.g., swirl separators and sand filters) may be appropriate in some instances to minimize the discharge of pollutants.

5. Technology-Based Effluent Limits (BPT/BAT/BCT): Non-Numeric Effluent Limits

a. Minimize Exposure

Minimize the exposure of raw, final, or waste materials to rain,

snow, snowmelt, and runoff. To the extent technologically available and economically practicable and achievable, either locate industrial materials and activities inside or protect them with storm resistant coverings in order to minimize exposure to rain, snow, snowmelt, and runoff (although significant enlargement of impervious surface area is not recommended). In minimizing exposure, pay particular attention to the following areas:

Loading and unloading areas: locate in roofed or covered areas where feasible; use grading, berming, or curbing around the loading area to divert run-on; locate the loading and unloading equipment and vehicles so that leaks are contained in existing containment and flow diversion systems.

Material storage areas: locate indoors, or in roofed or covered areas where feasible; install berms/dikes around these areas; use dry cleanup methods.

Note: Industrial materials do not need to be enclosed or covered if stormwater runoff from affected areas will not be discharged to receiving waters.

b. Good Housekeeping

Keep clean all exposed areas that are potential sources of pollutants, using such measures as sweeping at regular intervals, keeping materials orderly and labeled, and stowing materials in appropriate containers.

As part of the developed good housekeeping program, include a cleaning and maintenance program for all impervious areas of the facility where particulate matter, dust, or debris may accumulate, especially areas where material loading and unloading, storage, handling, and processing occur; and where practicable, the paving of areas where vehicle traffic or material storage occur but where vegetative or other stabilization methods are not practicable (institute a sweeping program in these areas too). For unstabilized areas where sweeping is not practicable, consider using stormwater management devices such as sediment traps, vegetative buffer strips, filter fabric fence, sediment filtering boom, gravel outlet protection, or other equivalent measures that effectively trap or remove sediment.